AMENDATORY SECTION (Amending WSR 01-11-038, filed 5/9/01, effective 9/1/01)

WAC 296-67-053 Emergency planning and response. The employer shall establish and implement an emergency action plan for the entire plant in accordance with the provisions of WAC 296-24-567. In addition, the emergency action plan shall include procedures for handling small releases. Employers covered under this standard may also be subject to the ((~~hazardous waste and~~)) emergency response provisions contained in ((~~WAC 296-800-170~~)) chapter 296-824 WAC, Emergency response to hazardous substance releases.

AMENDATORY SECTION (Amending WSR 01-11-038, filed 5/9/01, effective 9/1/01)

WAC 296-67-291 Appendix C--Compliance guidelines and recommendations for process safety management (nonmandatory). This appendix serves as a nonmandatory guideline to assist employers and employees in complying with the requirements of this section, as well as provides other helpful recommendations and information. Examples presented in this appendix are not the only means of achieving the performance goals in the standard. This appendix neither adds nor detracts from the requirements of the standard.

(1) Introduction to process safety management. The major objective of process safety management of highly hazardous chemicals is to prevent unwanted releases of hazardous chemicals especially into locations which could expose employees and others to serious hazards. An effective process safety management program requires a systematic approach to evaluating the whole process. Using this approach the process design, process technology, operational and maintenance activities and procedures, nonroutine activities and procedures, emergency preparedness plans and procedures, training programs, and other elements which impact the process are all considered in the evaluation. The various lines of defense that have been incorporated into the design and operation of the process to prevent or mitigate the release of hazardous chemicals need to be evaluated and strengthened to assure their effectiveness at each level. Process safety management is the proactive identification, evaluation and mitigation or prevention of chemical releases that could occur as a result of failures in process, procedures, or equipment. The process safety management standard targets highly hazardous chemicals that have the potential to cause a catastrophic incident. This standard as a whole is to aid employers in their efforts to prevent or mitigate episodic chemical releases that could lead to a catastrophe in the workplace and possibly to the surrounding community. To control these types of hazards, employers need to develop the necessary expertise, experiences, judgment, and proactive initiative within their workforce to properly implement and maintain an effective process safety management program as envisioned in the WISHA standard. This WISHA standard is required by the Clean Air Act amendments as is the Environmental Protection Agency's Risk Management Plan. Employers, who merge the two sets of requirements into their process safety management program, will better assure full compliance with each as well as enhancing their relationship with the local community. While WISHA believes process safety management will have a positive effect on the safety of employees in workplaces and also offers other potential

benefits to employers (increased productivity), smaller businesses which may have limited resources available to them at this time, might consider alternative avenues of decreasing the risks associated with highly hazardous chemicals at their workplaces. One method which might be considered is the reduction in the inventory of the highly hazardous chemical. This reduction in inventory will result in a reduction of the risk or potential for a catastrophic incident. Also, employers including small employers may be able to establish more efficient inventory control by reducing the quantities of highly hazardous chemicals on site below the established threshold quantities. This reduction can be accomplished by ordering smaller shipments and maintaining the minimum inventory necessary for efficient and safe operation. When reduced inventory is not feasible, then the employer might consider dispersing inventory to several locations on site. Dispersing storage into locations where a release in one location will not cause a release in another location is a practical method to also reduce the risk or potential for catastrophic incidents.

(2) Employee involvement in process safety management. Section 304 of the Clean Air Act amendments states that employers are to consult with their employees and their representatives regarding the employers efforts in the development and implementation of the process safety management program elements and hazard assessments. Section 304 also requires employers to train and educate their employees and to inform affected employees of the findings from incident investigations required by the process safety management program. Many employers, under their safety and health programs, have already established means and methods to keep employees and their representatives informed about relevant safety and health issues and employers may be able to adapt these practices and procedures to meet their obligations under this standard. Employers who have not implemented an occupational safety and health program may wish to form a safety and health committee of employees and management representatives to help the employer meet the obligations specified by this standard. These committees can become a significant ally in helping the employer to implement and maintain an effective process safety management program for all employees.

(3) Process safety information. Complete and accurate written information concerning process chemicals, process technology, and process equipment is essential to an effective process safety management program and to a process hazards analysis. The compiled information will be a necessary resource to a variety of users including the team that will perform the process hazards analysis as required under WAC 296-67-017; those developing the training programs and the operating procedures; contractors whose employees will be working with the process; those conducting the prestartup reviews; local emergency preparedness planners; and incurrence and enforcement officials. The information to be compiled about the chemicals, including process intermediates, needs to be comprehensive enough for an accurate assessment of the fire and explosion characteristics, reactivity hazards, the safety and health hazards to workers, and the corrosion and erosion effects on the process equipment and monitoring tools. Current material safety data sheet (MSDS) information can be used to help meet this requirement which must be supplemented with process chemistry information including runaway reaction and over pressure hazards if applicable. Process technology information will be a part of the process safety information package and it is expected that it will include diagrams of the type shown in WAC 296-67-289, Appendix B of this part as well as employer established criteria for maximum inventory levels for process chemicals; limits beyond which would be considered upset conditions; and a qualitative estimate of the consequences or results of deviation that could occur if operating beyond the established process limits. Employers are encouraged to use diagrams which will help users understand the process. A block flow diagram is used to show the major process equipment and interconnecting process flow lines and show

flow rates, stream composition, temperatures, and pressures when necessary for clarity. The block flow diagram is a simplified diagram. Process flow diagrams are more complex and will show all main flow streams including valves to enhance the understanding of the process, as well as pressures and temperatures on all feed and product lines within all major vessels, in and out of headers and heat exchangers, and points of pressure and temperature control. Also, materials of construction information, pump capacities and pressure heads, compressor horsepower and vessel design pressures and temperatures are shown when necessary for clarity. In addition, major components of control loops are usually shown along with key utilities on process flow diagrams. Piping and instrument diagrams (P&IDs) may be the more appropriate type of diagrams to show some of the above details and to display the information for the piping designer and engineering staff. The P&Ids are to be used to describe the relationships between equipment and instrumentation as well as other relevant information that will enhance clarity. Computer software programs which do P&Ids or other diagrams useful to the information package, may be used to help meet this requirement. The information pertaining to process equipment design must be documented. In other words, what were the codes and standards relied on to establish good engineering practice. These codes and standards are published by such organizations as the American Society of Mechanical Engineers, American Petroleum Institute, American National Standards Institute, National Fire Protection Association, American Society for Testing and Materials, National Board of Boiler and Pressure Vessel Inspectors, National Association of Corrosion Engineers, American Society of Exchange Manufacturers Association, and model building code groups. In addition, various engineering societies issue technical reports which impact process design. For example, the American Institute of Chemical Engineers has published technical reports on topics such as two phase flow for venting devices. This type of technically recognized report would constitute good engineering practice. For existing equipment designed and constructed many years ago in accordance with the codes and standards available at that time and no longer in general use today, the employer must document which codes and standards were used and that the design and construction along with the testing, inspection and operation are still suitable for the intended use. Where the process technology requires a design which departs from the applicable codes and standards, the employer must document that the design and construction is suitable for the intended purpose.

(4) Process hazard analysis. A process hazard analysis (PHA), sometimes called a process hazard evaluation, is one of the most important elements of the process safety management program. A PHA is an organized and systematic effort to identify and analyze the significance of potential hazards associated with the processing or handling of highly hazardous chemicals. A PHA provides information which will assist employers and employees in making decisions for improving safety and reducing the consequences of unwanted or unplanned releases of hazardous chemicals. A PHA is directed toward analyzing potential causes and consequences of fires, explosions, releases of toxic or flammable chemicals and major spills of hazardous chemicals. The PHA focuses on equipment, instrumentation, utilities, human actions (routine and nonroutine), and external factors that might impact the process. These considerations æssist in determining the hazards and potential failure points or failure modes in a process. The selection of a PHA methodology or technique will be influenced by many factors including the amount of existing knowledge about the process. Is it a process that has been operated for a long period of time with little or no innovation and extensive experience has been generated with its use? Or, is it a new process or one which has been changed frequently by the inclusion of innovative features? Also, the size and complexity of the process will influence the decision as to the appropriate PHA methodology to use. All PHA

methodologies are subject to certain limitations. For example, the checklist methodology works well when the process is very stable and no changes are made, but it is not as effective when the process has undergone extensive change. The checklist may miss the most recent changes and consequently the changes would not be evaluated. Another limitation to be considered concerns the assumptions made by the team or analyst. The PHA is dependent on good judgment and the assumptions made during the study need to be documented and understood by the team and reviewer and kept for a future PHA. The team conducting the PHA need to understand the methodology that is going to be used. A PHA team can vary in size from two people to a number of people with varied operational and technical backgrounds. Some team members may only be a part of the team for a limited time. The team leader needs to be fully knowledgeable in the proper implementation of the PHA methodology that is to be used and should be impartial in the evaluation. The other full or part time team members need to provide the team with expertise in areas such as process technology, process design, operating procedures and practices, including how the work is actually performed, alarms, emergency procedures, instrumentation, maintenance procedures, both routine and nonroutine tasks, including how the tasks are authorized, procurement of parts and supplies, safety and health, and any other relevant subject as the need dictates. At least one team member must be familiar with the process. The ideal team will have an intimate knowledge of the standards, codes, specifications and regulations applicable to the process being studied. The selected team members need to be compatible and the team leader needs to be able to manage the team, and the PHA study. The team needs to be able to work together while benefiting from the expertise of others on the team or outside the team, to resolve issues, and to forge a consensus on the findings of the study and recommendations. The application of a PHA to a process may involve the use of different methodologies for various parts of the process. For example, a process involving a series of unit operations of varying sizes, complexities, and ages may use different methodologies and team members for each operation. Then the conclusions can be integrated into one final study and evaluation. A more specific example is the use of a checklist PHA for a standard boiler or heat exchanger and the use of a hazard and operability PHA for the overall process. Also, for batch type processes like custom batch operations, a generic PHA of a representative batch may be used where there are only small changes of monomer or other ingredient ratios and the chemistry is documented for the full range and ratio of batch ingredients. Another process that might consider using a generic type of PHA is a gas plant. Often these plants are simply moved from site to site and therefore, a generic PHA may be used for these movable plants. Also, when an employer has several similar size gas plants and no sour gas is being processed at the site, then a generic PHA is feasible as long as the variations of the individual sites are accounted for in the PHA. Finally, when an employer has a large continuous process which has several control rooms for different portions of the process such as for a distillation tower and a blending operation, the employer may wish to do each segment separately and then integrate the final results. Additionally, small businesses which are covered by this rule, will often have processes that have less storage volume, less capacity, and less complicated than processes at a large facility. Therefore, WISHA would anticipate that the less complex methodologies would be used to meet the process hazard analysis criteria in the standard. These process hazard analyses can be done in less time and with a few people being involved. A less complex process generally means that less data, P&Ids, and process information is needed to perform a process hazard analysis. Many small businesses have processes that are not unique, such as cold storage lockers or water treatment facilities. Where employer associations have a number of members with such facilities, a generic PHA, evolved from a checklist or what-if questions, could be developed and used by each employer effectively

to reflect his/her particular process; this would simplify compliance for them. When the employer has a number of processes which require a PHA, the employer must set up a priority system of which PHAs to conduct first. A preliminary or gross hazard analysis may be useful in prioritizing the processes that the employer has determined are subject to coverage by the process safety management standard. Consideration should first be given to those processes with the potential of adversely affecting the largest number of employees. This prioritizing should consider the potential severity of a chemical release, the number of potentially affected employees, the operating history of the process such as the frequency of chemical releases, the age of the process and any other relevant factors. These factors would suggest a ranking order and would suggest either using a weighing factor system or a systematic ranking method. The use of a preliminary hazard analysis would assist an employer in determining which process should be of the highest priority and thereby the employer would obtain the greatest improvement in safety at the facility. Detailed guidance on the content and application of process hazard analysis methodologies is available from the American Institute of Chemical Engineers' Center for Chemical Process Safety (see WAC 296-67-293, Appendix D).

(5) Operating procedures and practices. Operating procedures describe tasks to be performed, data to be recorded, operating conditions to be maintained, samples to be collected, and safety and health precautions to be taken. The procedures need to be technically accurate, understandable to employees, and revised periodically to ensure that they reflect current operations. The process safety information package is to be used as a resource to better assure that the operating procedures and practices are consistent with the known hazards of the chemicals in the process and that the operating parameters are accurate. Operating procedures should be reviewed by engineering staff and operating personnel to ensure that they are accurate and provide practical instructions on how to actually carry out job duties safely. Operating procedures will include specific instructions or details on what steps are to be taken or followed in carrying out the stated procedures. These operating instructions for each procedure should include the applicable safety precautions and should contain appropriate information on safety implications. For example, the operating procedures addressing operating parameters will contain operating instructions about pressure limits, temperature ranges, flow rates, what to do when an upset condition occurs, what alarms and instruments are pertinent if an upset condition occurs, and other subjects. Another example of using operating instructions to properly implement operating procedures is in starting up or shutting down the process. In these cases, different parameters will be required from those of normal operation. These operating instructions need to clearly indicate the distinctions between startup and normal operations such as the appropriate allowances for heating up a unit to reach the normal operating parameters. Also the operating instructions need to describe the proper method for increasing the temperature of the unit until the normal operating temperature parameters are achieved. Computerized process control systems add complexity to operating instructions. These operating instructions need to describe the logic of the software as well as the relationship between the equipment and the control system; otherwise, it may not be apparent to the operator. Operating procedures and instructions are important for training operating personnel. The operating procedures are often viewed as the standard operating practices (SOPs) for operations. Control room personnel and operating staff, in general, need to have a full understanding of operating procedures. If workers are not fluent in English then procedures and instructions need to be prepared in a second language understood by the workers. In addition, operating procedures need to be changed when there is a change in the process as a result of the management of change procedures. The consequences of operating procedure changes need to be fully evaluated

and the information conveyed to the personnel. For example, mechanical changes to the process made by the maintenance department (like changing a valve from steel to brass or other subtle changes) need to be evaluated to determine if operating procedures and practices also need to be changed. All management of change actions must be coordinated and integrated with current operating procedures and operating personnel must be oriented to the changes in procedures before the change is made. When the process is shut down in order to make a change, then the operating procedures must be updated before startup of the process. Training in how to handle upset conditions must be accomplished as well as what operating personnel are to do in emergencies such as when a pump seal fails or a pipeline ruptures. Communication between operating personnel and workers performing work within the process area, such as nonroutine tasks, also must be maintained. The hazards of the tasks are to be conveyed to operating personnel in accordance with established procedures and to those performing the actual tasks. When the work is completed, operating personnel should be informed to provide closure on the job.

(6) Employee training. All employees, including maintenance and contractor employees, involved with highly hazardous chemicals need to fully understand the safety and health hazards of the chemicals and processes they work with for the protection of themselves, their fellow employees and the citizens of nearby communities. Training conducted in compliance with WAC 296-800-170, chemical hazard communication program standard, will help employees to be more knowledgeable about the chemicals they work with as well as familiarize them with reading and understanding MSDS. However, additional training in subjects such as operating procedures and safety work practices, emergency evacuation and response, safety procedures, routine and nonroutine work authorization activities, and other areas pertinent to process safety and health will need to be covered by an employer's training program. In establishing their training programs, employers must clearly define the employees to be trained and what subjects are to be covered in their training. Employers in setting up their training program will need to clearly establish the goals and objectives they wish to achieve with the training that they provide to their employees. The learning goals or objectives should be written in clear measurable terms before the training begins. These goals and objectives need to be tailored to each of the specific training modules or segments. Employers should describe the important actions and conditions under which the employee will demonstrate competence or knowledge as well as what is acceptable performance. Hands-on-training where employees are able to use their senses beyond listening, will enhance learning. For example, operating personnel, who will work in a control room or at control panels, would benefit by being trained at a simulated control panel or panels. Upset conditions of various types could be displayed on the simulator, and then the employee could go through the proper operating procedures to bring the simulator panel back to the normal operating parameters. A training environment could be created to help the trainee feel the full reality of the situation but, of course, under controlled conditions. This realistic type of training can be very effective in teaching employees correct procedures while allowing them to also see the consequences of what might happen if they do not follow established operating procedures. Other training techniques using videos or on-the-job training can also be very effective for teaching other job tasks, duties, or other important information. An effective training program will allow the employee to fully participate in the training process and to practice their skill or knowledge. Employers need to periodically evaluate their training programs to see if the necessary skills, knowledge, and routines are being properly understood and implemented by their trained employees. The means or methods for evaluating the training should be developed along with the training program goals and objectives. Training program evaluation will help

employers to determine the amount of training their employees understood, and whether the desired results were obtained. If, after the evaluation, it appears that the trained employees are not at the level of knowledge and skill that was expected, the employer will need to revise the training program, provide retraining, or provide more frequent refresher training sessions until the deficiency is resolved. Those who conducted the training and those who received the training should also be consulted as to how best to improve the training process. If there is a language barrier, the language known to the trainees should be used to reinforce the training messages and information. Careful consideration must be given to assure that employees including maintenance and contract employees receive current and updated training. For example, if changes are made to a process, impacted employees must be trained in the changes and understand the effects of the changes on their job tasks (e.g., any new operating procedures pertinent to their tasks). Additionally, as already discussed the evaluation of the employee's absorption of training will certainly influence the need for training.

(7) Contractors. Employers who use contractors to perform work in and around processes that involve highly hazardous chemicals, will need to establish a screening process so that they hire and use contractors who accomplish the desired job tasks without compromising the safety and health of employees at a facility. For contractors, whose safety performance on the job is not known to the hiring employer, the employer will need to obtain information on injury and illness rates and experience and should obtain contractor references. Additionally, the employer must assure that the contractor has the appropriate job skills, knowledge and certifications (such as for pressure vessel welders). Contractor work methods and experiences should be evaluated. For example, does the contractor conducting demolition work swing loads over operating processes or does the contractor avoid such hazards? Maintaining a site injury and illness log for contractors is another method employers must use to track and maintain current knowledge of work activities involving contract employees working on or adjacent to covered processes. Injury and illness logs of both the employer's employees and contract employees allow an employer to have full knowledge of process injury and illness experience. This log will also contain information which will be of use to those auditing process safety management compliance and those involved in incident investigations. Contract employees must perform their work safely. Considering that contractors often perform very specialized and potentially hazardous tasks such as confined space entry activities and nonroutine repair activities it is quite important that their activities be controlled while they are working on or near a covered process. A permit system or work authorization system for these activities would also be helpful to all affected employers. The use of a work authorization system keeps an employer informed of contract employee activities, and as a benefit the employer will have better coordination and more management control over the work being performed in the process area. A well run and well maintained process where employee safety is fully recognized will benefit all of those who work in the facility whether they be contract employees or employees of the owner.

(8) Prestartup safety. For new processes, the employer will find a PHA helpful in improving the design and construction of the process from a reliability and quality point of view. The safe operation of the new process will be enhanced by making use of the PHA recommendations before final installations are completed. P&Ids are to be completed along with having the operating procedures in place and the operating staff trained to run the process before startup. The initial startup procedures and normal operating procedures need to be fully evaluated as part of the prestartup review to assure a safe transfer into the normal operating mode for meeting the process parameters. For existing processes that have been shutdown for turnaround,

or modification, etc., the employer must assure that any changes other than "replacement in kind" made to the process during shutdown go through the management of change procedures. P&Ids will need to be updated as necessary, as well as operating procedures and instructions. If the changes made to the process during shutdown are significant and impact the training program, then operating personnel as well as employees engaged in routine and nonroutine work in the process area may need some refresher or additional training in light of the changes. Any incident investigation recommendations, compliance audits or PHA recommendations need to be reviewed as well to see what impacts they may have on the process before beginning the startup.

(9) Mechanical integrity. Employers will need to review their maintenance programs and schedules to see if there are areas where "breakdown" maintenance is used rather than an ongoing mechanical integrity program. Equipment used to process, store, or handle highly hazardous chemicals needs to be designed, constructed, installed, and maintained to minimize the risk of releases of such chemicals. This requires that a mechanical integrity program be in place to assure the continued integrity of process equipment. Elements of a mechanical integrity program include the identification and categorization of equipment and instrumentation, inspections and tests, testing and inspection frequencies, development of maintenance procedures, training of maintenance personnel, the establishment of criteria for acceptable test results, documentation of test and inspection results, and documentation of manufacturer recommendations as to meantime to failure for equipment and instrumentation. The first line of defense an employer has available is to operate and maintain the process as designed, and to keep the chemicals contained. This line of defense is backed up by the next line of defense which is the controlled release of chemicals through venting to scrubbers or flares, or to surge or overflow tanks which are designed to receive such chemicals, etc. These lines of defense are the primary lines of defense or means to prevent unwanted releases. The secondary lines of defense would include fixed fire protection systems like sprinklers, water spray, or deluge systems, monitor guns, etc., dikes, designed drainage systems, and other systems which would control or mitigate hazardous chemicals once an unwanted release occurs. These primary and secondary lines of defense are what the mechanical integrity program needs to protect and strengthen these primary and secondary lines of defenses where appropriate. The first step of an effective mechanical integrity program is to compile and categorize a list of process equipment and instrumentation for inclusion in the program. This list would include pressure vessels, storage tanks, process piping, relief and vent systems, fire protection system components, emergency shutdown systems, and alarms and interlocks and pumps. For the categorization of instrumentation and the listed equipment the employer would prioritize which pieces of equipment require closer scrutiny than others. Meantime to failure of various instrumentation and equipment parts would be known from the manufacturer's data or the employer's experience with the parts, which would then influence the inspection and testing frequency and associated procedures. Also, applicable codes and standards such as the National Board Inspection Code, or those from the American Society for Testing and Material, American Petroleum Institute, National Fire Protection Association, American National Standards Institute, American Society of Mechanical Engineers, and other groups, provide information to help establish an effective testing and inspection frequency, as well as appropriate methodologies. The applicable codes and standards provide criteria for external inspections for such items as foundation and supports, anchor bolts, concrete or steel supports, guy wires, nozzles and sprinklers, pipe hangers, grounding connections, protective coatings and insulation, and external metal surfaces of piping and vessels, etc. These codes and standards also provide information on methodologies for internal inspection, and a frequency formula based on the corrosion rate of the

materials of construction. Also, erosion both internal and external needs to be considered along with corrosion effects for piping and valves. Where the corrosion rate is not known, a maximum inspection frequency is recommended, and methods of developing the corrosion rate are available in the codes. Internal inspections need to cover items such as vessel shell, bottom and head; metallic linings; nonmetallic linings; thickness measurements for vessels and piping; inspection for erosion, corrosion, cracking and bulges; internal equipment like trays, baffles, sensors, and screens for erosion, corrosion or cracking and other deficiencies. Some of these inspections may be performed by state or local government inspectors under state and local statutes. However, each employer needs to develop procedures to ensure that tests and inspections are conducted properly and that consistency is maintained even where different employees may be involved. Appropriate training is to be provided to maintenance personnel to ensure that they understand the preventive maintenance program procedures, safe practices, and the proper use and application of special equipment or unique tools that may be required. This training is part of the overall training program called for in the standard. A quality assurance system is needed to help ensure that the proper materials of construction are used, that fabrication and inspection procedures are proper, and that installation procedures recognize field installation concerns. The quality assurance program is an essential part of the mechanical integrity program and will help to maintain the primary and secondary lines of defense that have been designed into the process to prevent unwanted chemical releases or those which control or mitigate a release. "As built" drawings, together with certifications of coded vessels and other equipment, and materials of construction need to be verified and retained in the quality assurance documentation. Equipment installation jobs need to be properly inspected in the field for use of proper materials and procedures and to assure that qualified craftsmen are used to do the job. The use of appropriate gaskets, packing, bolts, valves, lubricants, and welding rods need to be verified in the field. Also procedures for installation of safety devices need to be verified, such as the torque on the bolts on ruptured disc installations, uniform torque on flange bolts, proper installation of pump seals, etc. If the quality of parts is a problem, it may be appropriate to conduct audits of the equipment supplier's facilities to better assure proper purchases of required equipment which is suitable for its intended service. Any changes in equipment that may become necessary will need to go through the management of change procedures.

(10) Nonroutine work authorizations. Nonroutine work which is conducted in process areas needs to be controlled by the employer in a consistent manner. The hazards identified involving the work that is to be accomplished must be communicated to those doing the work, but also to those operating personnel whose work could affect the safety of the process. A work authorization notice or permit must have a procedure that describes the steps the maintenance supervisor, contractor representative or other person needs to follow to obtain the necessary clearance to get the job started. The work authorization procedures need to reference and coordinate, as applicable, lockout/tagout procedures, line breaking procedures, confined space entry procedures and hot work authorizations. This procedure also needs to provide clear steps to follow once the job is completed in order to provide closure for those that need to know the job is now completed and equipment can be returned to normal.

(11) Managing change. To properly manage changes to process chemicals, technology, equipment and facilities, one must define what is meant by change. In this process safety management standard, change includes all modifications to equipment, procedures, raw materials and processing conditions other than "replacement in kind." These changes need to be properly managed by identifying and reviewing them prior to implementation of

the change. For example, the operating procedures contain the operating parameters (pressure limits, temperature ranges, flow rates, etc.) and the importance of operating within these limits. While the operator must have the flexibility to maintain safe operation within the established parameters, any operation outside of these parameters requires review and approval by a written management of change procedure. Management of change covers such as changes in process technology and changes to equipment and instrumentation. Changes in process technology can result from changes in production rates, raw materials, experimentation, equipment unavailability, new equipment, new product development, change in catalyst and changes in operating conditions to improve yield or quality. Equipment changes include among others change in materials of construction, equipment specifications, piping prearrangements, experimental equipment, computer program revisions and changes in alarms and interlocks. Employers need to establish means and methods to detect both technical changes and mechanical changes. Temporary changes have caused a number of catastrophes over the years, and employers need to establish ways to detect temporary changes as well as those that are permanent. It is important that a time limit for temporary changes be established and monitored since, without control, these changes may tend to become permanent. Temporary changes are subject to the management of change provisions. In addition, the management of change procedures are used to insure that the equipment and procedures are returned to their original or designed conditions at the end of the temporary change. Proper documentation and review of these changes is invaluable in assuring that the safety and health considerations are being incorporated into the operating procedures and the process. Employers may wish to develop a form or clearance sheet to facilitate the processing of changes through the management of change procedures. A typical change form may include a description and the purpose of the change, the technical basis for the change, safety and health considerations, documentation of changes for the operating procedures, maintenance procedures, inspection and testing, P&Ids, electrical classification, training and communications, prestartup inspection, duration if a temporary change, approvals and authorization. Where the impact of the change is minor and well understood, a check list reviewed by an authorized person with proper communication to others who are affected may be sufficient. However, for a more complex or significant design change, a hazard evaluation procedure with approvals by operations, maintenance, and safety departments may be appropriate. Changes in documents such as P&Ids, raw materials, operating procedures, mechanical integrity programs, electrical classifications, etc., need to be noted so that these revisions can be made permanent when the drawings and procedure manuals are updated. Copies of process changes need to be kept in an accessible location to ensure that design changes are available to operating personnel as well as to PHA team members when a PHA is being done or one is being updated.

(12) Investigation of incidents. Incident investigation is the process of identifying the underlying causes of incidents and implementing steps to prevent similar events from occurring. The intent of an incident investigation is for employers to learn from past experiences and thus avoid repeating past mistakes. The incidents for which WISHA expects employers to become aware and to investigate are the types of events which result in or could reasonably have resulted in a catastrophic release. Some of the events are sometimes referred to as "near misses," meaning that a serious consequence did not occur, but could have. Employers need to develop in-house capability to investigate incidents that occur in their facilities. A team needs to be assembled by the employer and trained in the techniques of investigation including how to conduct interviews of witnesses, needed documentation and report writing. A multidisciplinary team is better able to gather the facts of the event and to analyze them and develop plausible scenarios as to what happened, and why. Team members should be selected on

the basis of their training, knowledge and ability to contribute to a team effort to fully investigate the incident. Employees in the process area where the incident occurred should be consulted, interviewed, or made a member of the team. Their knowledge of the events form a significant set of facts about the incident which occurred. The report, its findings and recommendations are to be shared with those who can benefit from the information. The cooperation of employees is essential to an effective incident investigation. The focus of the investigation should be to obtain facts, and not to place blame. The team and the investigation process should clearly deal with all involved individuals in a fair, open, and consistent manner.

(13) Emergency preparedness. Each employer must address what actions employees are to take when there is an unwanted release of highly hazardous chemicals. Emergency preparedness or the employer's tertiary (third) lines of defense are those that will be relied on along with the secondary lines of defense when the primary lines of defense which are used to prevent an unwanted release fail to stop the release. Employers will need to decide if they want employees to handle and stop small or minor incidental releases. Whether they wish to mobilize the available resources at the plant and have them brought to bear on a more significant release. Or whether employers want their employees to evacuate the danger area and promptly escape to a preplanned safe zone area, and allow the local community emergency response organizations to handle the release. Or whether the employer wants to use some combination of these actions. Employers will need to select how many different emergency preparedness or tertiary lines of defense they plan to have and then develop the necessary plans and procedures, and appropriately train employees in their emergency duties and responsibilities and then implement these lines of defense. Employers at a minimum must have an emergency action plan which will facilitate the prompt evacuation of employees due to an unwanted release of a highly hazardous chemical. This means that the employer will have a plan that will be activated by an alarm system to alert employees when to evacuate and, that employees who are physically impaired, will have the necessary support and assistance to get them to the safe zone as well. The intent of these requirements is to alert and move employees to a safe zone quickly. Delaying alarms or confusing alarms are to be avoided. The use of process control centers or similar process buildings in the process area as safe areas is discouraged. Recent catastrophes have shown that a large life loss has occurred in these structures because of where they have been sited and because they are not necessarily designed to withstand over-pressures from shockwaves resulting from explosions in the process area. Unwanted incidental releases of highly hazardous chemicals in the process area must be addressed by the employer as to what actions employees are to take. If the employer wants employees to evacuate the area, then the emergency action plan will be activated. For outdoor processes where wind direction is important for selecting the safe route to a refuge area, the employer should place a wind direction indicator such as a wind sock or pennant at the highest point that can be seen throughout the process area. Employees can move in the direction of cross wind to upwind to gain safe access to the refuge area by knowing the wind direction. If the employer wants specific employees in the release area to control or stop the minor emergency or incidental release, these actions must be planned for in advance and procedures developed and implemented. Preplanning for handling incidental releases for minor emergencies in the process area needs to be done, appropriate equipment for the hazards must be provided, and training conducted for those employees who will perform the emergency work before they respond to handle an actual release. The employer's training program, including the hazard communication standard training is to address the training needs for employees who are expected to handle incidental or minor releases. Preplanning for releases that are more

serious than incidental releases is another important line of defense to be used by the employer. When a serious release of a highly hazardous chemical occurs, the employer through preplanning will have determined in advance what actions employees are to take. The evacuation of the immediate release area and other areas as necessary would be accomplished under the emergency action plan. If the employer wishes to use plant personnel such as a fire brigade, spill control team, a hazardous materials team, or use employees to render aid to those in the immediate release area and control or mitigate the incident, these actions are covered by ((~~WAC 296-62-300, the hazardous waste operations and emergency response (HAZWOPER) standard~~)) chapter 296-824 WAC, Emergency response to hazardous substance releases. If outside assistance is necessary, such as through mutual aid agreements between employers or local government emergency response organizations, these emergency responders are also covered by ((~~HAZWOPER~~)) chapter 296-824 WAC. The safety and health protections required for emergency responders are the responsibility of their employers and of the on-scene incident commander. Responders may be working under very hazardous conditions and therefore the objective is to have them competently led by an on-scene incident commander and the commander's staff, properly equipped to do their assigned work safely, and fully trained to carry out their duties safely before they respond to an emergency. Drills, training exercises, or simulations with the local community emergency response planners and responder organizations is one means to obtain better preparedness. This close cooperation and coordination between plant and local community emergency preparedness managers will also aid the employer in complying with the Environmental Protection Agency's risk management plan criteria. One effective way for medium to large facilities to enhance coordination and communication during emergencies for on plant operations and with local community organizations is for employers to establish and equip an emergency control center. The emergency control center would be sited in a safe zone area so that it could be occupied throughout the duration of an emergency. The center would serve as the major communication link between the on-scene incident commander and plant or corporate management as well as with the local community officials. The communication equipment in the emergency control center should include a network to receive and transmit information by telephone, radio, or other means. It is important to have a backup communication network in case of power failure or one communication means fails. The center should also be equipped with the plant layout and community maps, utility drawings including fire water, emergency lighting, appropriate reference materials such as a government agency notification list, company personnel phone list, SARA Title III reports and material safety data sheets, emergency plans and procedures manual, a listing with the location of emergency response equipment, mutual aid information, and access to meteorological or weather condition data and any dispersion modeling data.

(14) Compliance audits. Employers need to select a trained individual or assemble a trained team of people to audit the process safety management system and program. A small process or plant may need only one knowledgeable person to conduct an audit. The audit is to include an evaluation of the design and effectiveness of the process safety management system and a field inspection of the safety and health conditions and practices to verify that the employer's systems are effectively implemented. The audit should be conducted or led by a person knowledgeable in audit techniques and who is impartial towards the facility or area being audited. The essential elements of an audit program include planning, staffing, conducting the audit, evaluation and corrective action, follow-up and documentation. Planning in advance is essential to the success of the auditing process. Each employer needs to establish the format, staffing, scheduling, and verification methods prior to conducting the audit. The format should be designed to provide the lead auditor with a procedure or checklist which details the requirements of each section of the standard. The names of the audit team members should be

listed as part of the format as well. The checklist, if properly designed, could serve as the verification sheet which provides the auditor with the necessary information to expedite the review and assure that no requirements of the standard are omitted. This verification sheet format could also identify those elements that will require evaluation or a response to correct deficiencies. This sheet could also be used for developing the follow-up and documentation requirements. The selection of effective audit team members is critical to the success of the program. Team members should be chosen for their experience, knowledge, and training and should be familiar with the processes and with auditing techniques, practices, and procedures. The size of the team will vary depending on the size and complexity of the process under consideration. For a large, complex, highly instrumented plant, it may be desirable to have team members with expertise in process engineering and design, process chemistry, instrumentation and computer controls, electrical hazards and classifications, safety and health disciplines, maintenance, emergency preparedness, warehousing or shipping, and process safety auditing. The team may use part-time members to provide for the depth of expertise required as well as for what is actually done or followed, compared to what is written. An effective audit includes a review of the relevant documentation and process safety information, inspection of the physical facilities, and interviews with all levels of plant personnel. Utilizing the audit procedure and checklist developed in the preplanning stage, the audit team can systematically analyze compliance with the provisions of the standard and any other corporate policies that are relevant. For example, the audit team will review all aspects of the training program as part of the overall audit. The team will review the written training program for adequacy of content, frequency of training, effectiveness of training in terms of its goals and objectives as well as to how it fits into meeting the standard's requirements, documentation, etc. Through interviews, the team can determine the employee's knowledge and awareness of the safety procedures, duties, rules, emergency response assignments, etc. During the inspection, the team can observe actual practices such as safety and health policies, procedures, and work authorization practices. This approach enables the team to identify deficiencies and determine where corrective actions or improvements are necessary. An audit is a technique used to gather sufficient facts and information, including statistical information, to verify compliance with standards. Auditors should select as part of their preplanning a sample size sufficient to give a degree of confidence that the audit reflects the level of compliance with the standard. The audit team, through this systematic analysis, should document areas which require corrective action as well as those areas where the process safety management system is effective and working in an effective manner. This provides a record of the audit procedures and findings, and serves as a baseline of operation data for future audits. It will assist future auditors in determining changes or trends from previous audits. Corrective action is one of the most important parts of the audit. It includes not only addressing the identified deficiencies, but also planning, followup, and documentation. The corrective action process normally begins with a management review of the audit findings. The purpose of this review is to determine what actions are appropriate, and to establish priorities, timetables, resource allocations, and requirements and responsibilities. In some cases, corrective action may involve a simple change in procedure or minor maintenance effort to remedy the concern. Management of change procedures need to be used, as appropriate, even for what may seem to be a minor change. Many of the deficiencies can be acted on promptly, while some may require engineering studies or indepth review of actual procedures and practices. There may be instances where no action is necessary and this is a valid response to an audit finding. All actions taken, including an explanation where no action is taken on a finding, needs to be documented as to what was done and why.

It is important to assure that each deficiency identified is addressed, the corrective action to be taken noted, and the audit person or team responsible be properly documented by the employer. To control the corrective action process, the employer should consider the use of a tracking system. This tracking system might include periodic status reports shared with affected levels of management, specific reports such as completion of an engineering study, and a final implementation report to provide closure for audit findings that have been through management of change, if appropriate, and then shared with affected employees and management. This type of tracking system provides the employer with the status of the corrective action. It also provides the documentation required to verify that appropriate corrective actions were taken on deficiencies identified in the audit.

AMENDATORY SECTION (Amending WSR 96-11-067, filed 5/10/96, effective 1/1/97)

WAC 296-305-05011 Hazardous materials operations. Fire departments engaged in emergency response to releases of hazardous substances shall comply with chapter ((~~296-62 WAC, Part P, Hazardous Waste Operations and Emergency Response~~)) 296-824 WAC, Emergency response to hazardous substance releases.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-100 Scope. ((~~***What is the purpose of chapter 296-824 WAC, Emergency response to hazardous substance releases?***~~

~~To~~)) This chapter states the minimum requirements that help you protect the safety and health of your employees during a response to a ***hazardous substance releases*** in your ***workplace*** or any other location.

((~~***Does this chapter apply to your workplace?***~~))

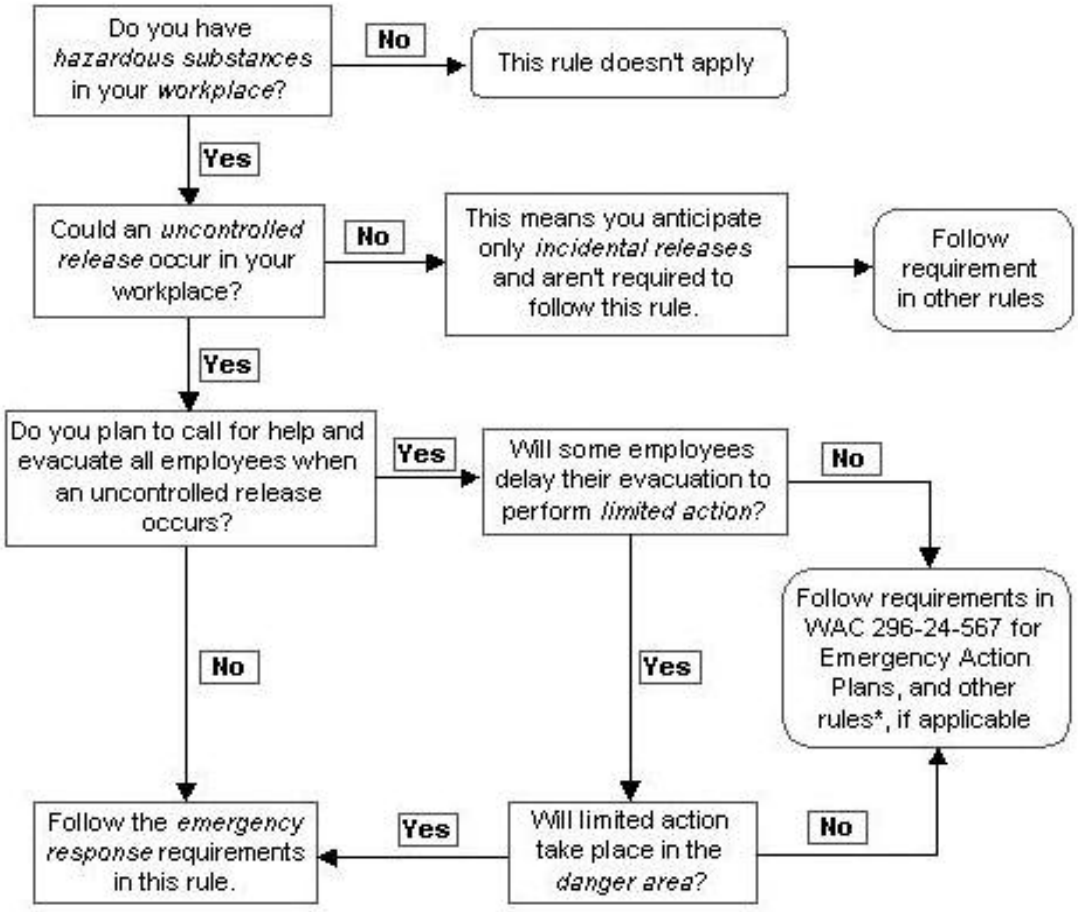
This chapter applies if your employees are, or could become, involved in responding to uncontrolled releases of hazardous substances in your workplace or any other location. Use the scope flow chart, and definitions that follow, to determine if this chapter applies to your workplace(s). Defined words are italicized in the flow chart.

EXEMPTION:
- This chapter does not apply to you if your workplace is a hazardous waste site. If you are not sure about your site classification, see chapter 296-62 WAC, Part P, Hazardous waste operations and treatment, storage, and disposal facilities.
- If your workplace is a treatment, storage, and disposal site this chapter may apply.

Note: Requirements in other chapters may also apply to your workplace. You will find some safety and health requirements (for example, personal protective equipment) are addressed on a general level in the WISHA Safety and Health Core Rules, chapter 296-800 WAC, while being addressed for a specific application in this rule. When this happens, both requirements apply and should not conflict.

If you are uncertain which requirements to follow, you must comply with the more protective requirement. Contact your local L&I office if you need assistance in making this determination.

824 Flowchart



((~~*The flow chart references other chapters applicable to your workplace depending on conditions and hazards. Examples include:~~

- ~~WAC 296-800-140, Accident prevention program~~
- ~~WAC 296-800-160, Personal protective equipment (PPE)~~
- ~~WAC 296-800-170, Employer chemical hazard communication~~
- ~~WAC 296-62-400, Hazardous chemicals in laboratories~~
- ~~WAC 296-62-071, Respiratory protection~~
- ~~WAC 296-24-567, Employee emergency plans and fire prevention plans~~))

Definitions applicable to the flow chart. (See WAC ((~~296-824-15010~~)) 296-824-800 for additional definitions used in the chapter):

Danger area

Areas where conditions pose a serious danger to employees, such as areas where:

- Immediately dangerous to life or health (IDLH) conditions could exist

OR

- High levels of exposure to toxic substances could exist

OR

- There is a potential for exceeding the lower explosive limit (LEL), also known as the lower flammability limit (LFL), of a substance.

Emergency response

A response to an anticipated release of a hazardous substance that is, or could become, an *uncontrolled release*.

Hazardous substance

Any biological, radiological, or chemical substance that can have adverse effects on humans. (See WAC ((~~296-824-15010~~)) 296-824-800 for a more specific definition.)

Immediately dangerous to life or health (IDLH)

Any atmospheric condition that would:

- Cause an immediate threat to life
- Cause permanent or delayed adverse health effects
- Interfere with an employee's ability to escape

Incidental release

A release that can be safely controlled at the time of the release and does not have the potential to become an *uncontrolled release*.

Example of a situation that results in an incidental release:

A tanker truck is receiving a load of hazardous liquid when a leak occurs. The driver knows the only hazard from the liquid is minor skin irritation. The employer has trained the driver on procedures and provided equipment to use for a release of this quantity. The driver puts on skin protection and stops the leak. A spill kit is used to contain, absorb, and pick up the spilled material for disposal.

Limited action

Action necessary to:

- Secure an operation during emergency responses,

OR

- Prevent an incident from increasing in severity.

Examples include shutting down processes and closing emergency valves.

Release

A spill, leak, or other type of hazardous substance discharge.

Uncontrolled release

A release where significant safety and health risks could be created. Releases of hazardous substances that are either incidental or could not create a safety or health hazard (i.e., fire, explosion or chemical exposure) are not considered to be uncontrolled releases.

Examples of conditions that could create a significant safety and health risk:

- Large-quantity releases
- Small-releases that could be highly toxic
- Potentially contaminated individuals arriving at hospitals
- Airborne exposures that could exceed a WISHA permissible exposure limit or a published exposure limit and employees are not adequately trained or equipped to control the release.

Example of an uncontrolled release:

A forklift driver knocks over a container of a solvent-based liquid, releasing the contents onto the warehouse floor. The driver has been trained to recognize the vapor is flammable and moderately toxic when inhaled. The driver has not been trained or provided appropriate equipment to address this type of spill. In this situation, it is not safe for the driver to attempt a response. The driver needs to notify someone of the release so an emergency response can be initiated.

Workplace

- A fixed facility

OR

- A temporary location (such as a traffic corridor)

OR

- Locations where employees respond to emergencies.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-110 ((~~Summary.~~))

((~~**Your responsibility:**~~

~~To anticipate, plan for, and manage emergency response operations so employees are protected from hazardous substances and conditions.~~

~~**Note:** Other chapters may apply to your workplace, such as:~~
- ~~Chapter 296-800 WAC, Safety and health core rules~~
- ~~Chapter 296-62 WAC, General occupational health standards~~
- ~~Chapter 296-24 WAC, General safety and health standards~~
- ~~Chapter 296-155 WAC, Safety standards for construction work~~

~~You will find some safety and health requirements (for example, personal protective equipment) are addressed on a general level in the core rules, while being addressed for a specific application in this rule. When this happens, both requirements apply and should not conflict.~~

~~If you are uncertain which requirements to follow, you must comply with the more protective requirement. Contact your local L&I office if you need assistance in making this determination.~~

~~**You must:**~~

~~**Planning**~~

~~Develop an emergency response plan~~

~~WAC 296-824-11010~~

~~**Training**~~

~~Train your employees~~

~~WAC 296-824-11020~~

~~**Medical surveillance**~~

~~Provide medical surveillance to employees~~

~~WAC 296-824-11050~~

~~Keep records~~

~~WAC 296-824-11060~~

~~**Incident requirements**~~

~~Recognize emergencies and initiate a response~~

~~WAC 296-824-12010~~

~~Implement and maintain an incident command system~~

~~WAC 296-824-12020~~

~~Prepare skilled support personnel~~

~~WAC 296-824-12030~~

~~Make sure the incident commander oversees activities during the response~~

~~WAC 296-824-12040~~

~~Use the buddy system in danger areas~~

~~WAC 296-824-12050~~

~~Provide rescue and medical assistance~~

~~WAC 296-824-12060~~

~~**Personal protective equipment (PPE)**~~

~~Use appropriate PPE~~

~~WAC 296-824-13010~~

~~Control hazards created by PPE~~

~~WAC 296-824-13020~~

~~Use PPE properly~~
~~WAC 296-824-13030~~
~~**Postemergency response**~~
~~WAC 296-824-14010~~
~~**Definitions**~~
~~WAC 296-824-15010.~~))
Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-11010 ((~~Planning.~~)) ((~~Develop an emergency response plan.~~

~~**Note:**~~ ~~• You may already have an emergency response plan, such as required by chapter 296-62 WAC, Part P, Hazardous waste operations and treatment, storage and disposal facilities or by state and locally coordinated response efforts (Section 303 of Superfund Amendments and Reauthorization Act (SARA), Title III). You may use those plans to comply with this section, if they include the items listed below.~~
~~• Before a written emergency response plan can be developed, you will need to anticipate the types of uncontrolled releases that employees could encounter in your workplace(s).~~

~~**You must:**~~
~~(1) Make sure your plan is written and adequately addresses, as a minimum, all of the following:~~
~~• Preemergency planning and coordination with additional responders (including personnel from other employers such as: Fire departments, law enforcement agencies, emergency medical services, and state or federal agencies).~~
~~• Personnel roles, (See Table 1) and lines of authority and communications for all affected parties including responders~~
~~• Employee training (see WAC 296-824-11020 for more detail):~~

~~**Note:**~~ ~~• Responders' level of training depends on the duties or roles the employer assigns.~~
~~• Training for the employees' role should address the competencies specified in Tables 3 through 6.~~
~~• Training on specific substances may be appropriate depending on the number and characteristics of hazardous substances expected to be encountered. For example, if employees may only respond to one substance, you could provide training (covering the knowledge and skills specified in Tables 3 through 6) on that single substance. If employees might respond to a range of hazardous substances, training may be required to cover categories of hazardous substances.~~
~~• Videos and automated training methods (for example: Interactive computer based programs) may be used in training; however, instructors must be readily available to:~~
~~Encourage and provide responses to questions for the benefit of the group.~~
~~Evaluate employee understanding of the material.~~
~~Provide other instructional interaction to the group.~~

~~• Emergency recognition~~
~~• Immediate emergency procedures including:~~
~~– Methods of alerting employees (see WAC 296-800-310, exit routes and employee alarm systems) and outside responders~~
~~– Procedures for limited action (emergency prevention)~~

~~**Note:**~~ ~~***Limited action*** includes shutting down processes, closing emergency valves and other critical actions to secure the operation, or prevent the incident from increasing in severity.~~

~~**Limited Action and Employee Roles**~~	
~~**If . . .**~~	~~**Then employees involved would be:**~~
~~Limited action could be conducted in the danger area~~	~~Considered emergency responders~~
~~Limited action will not be conducted in the danger area~~	~~Considered evacuees, not emergency responders~~

– Details of who will evacuate immediately and who will remain behind for limited action

– Evacuation routes and procedures

– How to establish safe distances and places of refuge (for example, during emergency response the incident commander (IC) decides to make changes based on new developments, i.e., changes in the wind direction).

- Methods of securing and controlling access to the site
- Emergency medical treatment and first aid
- A complete personal protective equipment (PPE) program that addresses:

– Selection of PPE including selection criteria to be used and the identification, specified use and limitations of the PPE selected.

– Training on proper use of PPE (including maintenance). – Hazards created by wearing PPE including heat stress during temperature extremes, and/or other appropriate medical considerations.

– Criteria used for determining the proper fit of PPE.

– Procedures covering proper use of PPE including procedures for inspection, putting it on (donning) and removing it (doffing).

– Maintenance of PPE including procedures for decontamination, disposal and storage.

– Methods used to evaluate the effectiveness of your PPE program.

Note:
- If a manufacturer's printed information or WISHA rule adequately addresses procedural requirements (such as donning or doffing for PPE), it is not necessary to rewrite this into your program; simply attach the printed information.
- You may use written procedures provided by the equipment manufacturer when they meet the requirements of other chapters, including chapter 296 62 WAC, Part E, Respiratory protection.

- Emergency equipment
- Emergency response procedures
- Decontamination procedures determined by a hazardous materials specialist or other qualified individual
- Methods to critically assess the response and conduct appropriate follow-up

You must:

(2) Make your written emergency response plan available to employees, their representatives, and WISHA personnel for inspecting or copying.

Note: In situations where multiple employers could respond to an incident, all plans should consistently address:
- Who will be designated as the incident commander (IC)

AND
- If, when, and how transfer of the incident commander (IC) position will take place.

Table 1
Roles and Duties of Emergency Responders

If the employee's role is:	**Then all of the following apply. They:**
First responder at the awareness level	- Are likely to witness or discover a hazardous substance release - Are trained to initiate an emergency response by notifying the proper authorities of the release - Take no further action beyond notifying the authorities
First responder at the operations level	- Respond to actual or potential releases in order to protect nearby persons, property, and/or the environment from the effects of the release - Are trained to respond defensively, without trying to stop the release - May try to: – Confine the release from a safe distance – Keep it from spreading

	- Protect others from hazardous exposures
Hazardous materials technician	• Respond to releases or potential releases, with the intent of stopping the release • Are trained to approach the point of release offensively in order to, either: - Plug - Patch - Stop the release using other methods
Hazardous materials specialist	• Respond along with, and provide support to, hazardous materials technicians • Are required to have more specific knowledge of hazardous substances than a hazardous materials technician • Act as the site activity liaison when federal, state, local, and other government authorities participate
Incident commander	• Have ultimate responsibility for: - Direction - Control - Coordination of the response effort - Will assume control of the incident beyond the first responder awareness level
Specialist employee	• Are a technical, medical, environmental, or other type of expert • May represent a hazardous substance manufacturer, shipper, or a government agency • May be present at the scene or may assist from an off-site location • Regularly work with specific hazardous substances • Are trained in the hazards of specific substances • Are expected to give technical advice or assistance to the incident commander or incident safety officer, when requested
Skilled support personnel	• Are needed to perform an immediate, specific emergency support task at the site • Are skilled in the operation of equipment including: – Earth moving equipment – Cranes – Hoisting equipment
Incident safety officer	• Are designated by the incident commander • Are knowledgeable in operations being implemented at the site • Have specific responsibility to: – Identify and evaluate hazards – Provide direction on employee safety matters))

Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-11020 ((~~Training.~~))
((~~Train your employees~~

~~**Note:** Use Tables 3 through 6 to identify your employees' training competencies.~~
~~You may conduct training internally, or use outside training services to comply with this section.~~
~~When outside trainers are hired, you are still responsible for making sure the requirements of this section are met. For example, employers may compare the course outline to the competencies listed in Tables 3, 4 and 5.~~

~~**You must:**~~
~~Make sure employees are appropriately trained for their assigned roles and duties as follows:~~

~~EXEMPTION: Skilled support employees are not covered by the training requirements in this section. (See WAC 296-824-12030.)~~

~~**- Initial training:**~~
~~Provide initial training before the employee is allowed to participate in an actual emergency response operation.~~

~~**Note:** When first responders at the awareness or operations level have sufficient experience to objectively demonstrate competencies specified in Table 3, you may accept experience instead of training.~~

~~Make sure initial training adequately addresses the competencies in Tables 3 through 6 and the minimum training durations in Table 2.~~
~~Certify that employees objectively demonstrate competencies specified in Tables 3, 4 and 5 (except for employees trained as first responders at the awareness level).~~
~~**- Retraining (refresher) training:**~~
~~Provide retraining annually~~
~~Make sure retraining covers necessary content~~
~~Document training or demonstrated competency~~

~~**Note:** Retraining is not required when employees demonstrate competencies annually and a record is kept of the demonstration methodology used.~~

~~**- Trainer qualifications:**~~
~~Verify trainers have satisfactorily completed an instructors' training course for the subjects they teach. For example, courses offered by the United States National Academy, or equivalent courses are acceptable.~~
~~**OR**~~
~~Have the educational and instructional experience necessary for training.~~
~~**- Specialist employees:**~~
~~Specialist employees who have been sent to the scene to advise or assist must receive training or demonstrate competency in their specialty, annually.~~

~~**Table 2** **Minimum Training Durations for All Responders**~~	
~~**If you are a:**~~	~~**Then:**~~
~~First responder at the awareness level~~	~~Training duration needs to be sufficient to provide the required competencies~~
~~First responder at the operations level~~	~~You need a minimum of 8 hours training (see Table 3)~~
~~Hazardous materials technician~~	~~You need a minimum of 24 hours training (see Table 4)~~
~~Hazardous materials specialist~~	~~You need a minimum of 24 hours training (see Table 4)~~
~~Incident commander~~	~~You need a minimum of 24 hours training (see Table 5)~~

Table 3 Competencies for First Responders at the Awareness Level and Operations Level		
Employees must be able to show they:	When they are designated as First Responders at the:	
	Awareness Level	Operations Level
Understand what hazardous substances are and their associated risks.	X	X
Recognize the presence of hazardous substances in an emergency.	X	X
Can identify the hazardous substances, when possible.	X	X
Understand the potential consequences of hazardous substances in an emergency.	X	X
Understand the role of a first responder at the awareness level as described in: (1) The employer's emergency response plan, including site security and control. (2) The United States Department of Transportation's Emergency Response Guidebook. *(search at: http://www.dot.gov)*.	X	X
Can use The United States Department of Transportation's Emergency Response Guidebook.	X	X
Recognize the need for additional resources and the need to notify the incident's communication center accordingly.	X	X
Know basic hazard and risk assessment techniques.		X
Can select and use personal protective equipment (PPE) appropriate for first responder operations level.		X
Understand basic hazardous materials terms.		X
Can perform basic control, containment, and/or confinement operations within the capabilities of the resources and PPE available.		X
Can implement decontamination procedures to their level training.		X
Understand relevant standard operating and termination procedures.		X

Table 4 Competencies for Hazardous Materials Technicians and Hazardous Materials Specialist		
Employees must be able to show they:	When they are designated as a Hazardous Materials:	
	Technician	Specialist
Have the competencies specified for the first responder operations level. (See Table 3)	X	X
Can implement an employer's emergency response plan.	X	X
Can function within their assigned role in the incident command system.	X	X
Understand hazard and risk assessment techniques.	X	X
Understand basic chemical and toxicological terminology and behavior.	X	X
Can use field survey instruments and equipment to classify, identify, and verify materials at the incident.	X	X

Can select and use personal protective equipment (PPE) appropriate for hazardous materials technicians.	X	X
Can perform advance control, containment, and/or confinement operations within the capabilities of the resources and PPE available.	X	X
Can implement decontamination procedures to their level of training.	X	X
Understand termination procedures.	X	X
Can implement the local emergency response plan.		X
Know of the state emergency response plan.		X
Can develop a site safety and control plan.		X
Understand chemical, radiological, and toxicological terminology and behavior.		X
Understand in-depth hazard and risk techniques.		X
Can use advanced survey instruments and equipment to classify, identify and verify materials at the incident.		X
Can select and use proper specialized chemical PPE given to hazardous materials specialists.		X
Can perform specialized control, containment, and/or confinement operations within the capabilities of the resources and PPE available.		X
Can determine decontamination procedures.		X

Table 5
Competencies for Incident Commanders

Employees designated as Incident Commanders must be able to show they:
• Have competencies specified for the First Responder Operations Level. (See Table 3.)
• Know of the state emergency response plan and the Federal Regional Response Team.
• Can implement the local emergency response plan.
• Can implement the employer's emergency response plan.
• Have knowledge of the incident command system (ICS) and understand how they relate to it.
• Can implement the employer's ICS.
• Understand the hazards and risks associated with employees working in chemical protective clothing.
• Understand the importance of decontamination procedures.
Note: If the first employee arriving at the scene is not trained as an IC, they may take control of the incident within their designated role and training level.

Table 6
Competencies for Specialist Employees

Employees designated as Specialist Employees must be able to show they:
• Have current knowledge in their field regarding safety and health practices relating to the specific hazardous substances.
• Have the knowledge of the ICS and understand how they relate to it.

- ~~Understand the care and use of personal protective equipment (PPE).~~))

Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-11050 ((~~Medical surveillance.~~)) ((~~Provide medical surveillance to employees.~~

~~**You must:**~~

~~(1) Provide medical surveillance for employees to comply with Tables 7 and 8, and the following:~~

- ~~Make medical surveillance available at:~~
  - ~~Reasonable times and places.~~
  - ~~No cost to employees, including travel associated costs such as mileage, gas or bus fare if the employee is required to travel off site~~

  ~~**AND**~~
  - ~~Wages for additional time spent outside of employees normal work hours.~~
- ~~Make sure a licensed physician performs or supervises exams and procedures.~~
- ~~Give complete information to the examining physician including:~~
  - ~~A copy of this chapter.~~
  - ~~A description of the employee's duties that relate to hazardous substance exposure.~~
  - ~~The hazardous substance exposure levels anticipated for the employee.~~
  - ~~A description of the personal protective equipment (PPE) the employee could use.~~
  - ~~Information available from previous medical examinations.~~
  - ~~The medical evaluation information required by chapter 296-62 WAC, Part E, Respiratory protection.~~
- ~~Medical exams must include, at a minimum:~~
  - ~~A medical history~~
  - ~~A work history (or updated history if on file)~~
  - ~~A special emphasis on:~~
    - ~~Assessment of symptoms related to handling hazardous substances~~
    - ~~Health hazards~~
    - ~~Evaluation of fitness for duty (including the ability to wear any personal protective equipment (PPE) or other conditions that may be expected at the workplace)~~
  - ~~Other content as determined by the examining physician.~~

~~**Note:** The physician should consult the *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* and the *Medical Management Guidelines for Acute Chemical Exposure* (search OSHA website: http://www.osha.gov).~~

~~(2) Obtain the physician's written opinion and give a copy to the employee that includes:~~

- ~~A statement of whether or not medical conditions were found which would increase the employee's risk for impairment during emergency response work or respirator use.~~
  - ~~Do not include specific findings or diagnoses unrelated to occupational exposures.~~
- ~~Limitations recommended to the employee's assigned work, if any.~~
- ~~Exam and test results if the employee requests this information.~~
- ~~A statement that affirms the employee has been confidentially informed of medical exam results (including medical conditions requiring follow-up).~~

Table 7 **Medical Surveillance for Employee Categories**	
If the employee is covered by this chapter and is:	**Then you must:**
• Exposed for at least 30 days a year to health hazards or hazardous substances at or above the permissible exposure limit or published exposure levels (even when respirators are used), **OR** • Required to wear a respirator for at least 30 days a year.*	• Offer standard medical surveillance as specified in Table 8.*
• A hazardous materials (HAZMAT) team member • A hazardous materials specialist	• Provide standard medical surveillance as specified in Table 8.
• An emergency responder who shows immediate or delayed signs or symptoms possibly resulting from exposure to hazardous substances during an incident.	• Provide incident-specific medical surveillance as specified in Table 8.
• Not an emergency responder and: – May be injured – Shows immediate or delayed signs or symptoms possibly resulting from exposure to hazardous substances – May have been exposed to hazardous substances at concentrations above the permissible exposure limits (PELs) or the published exposure levels without appropriate PPE.	• Offer incident-specific medical surveillance as specified in Table 8.

*__Note:__ A medical evaluation for respirator use is required by chapter 296-62 WAC, Part E, Respiratory protection, for those employees who have not been cleared for respirator use during medical surveillance activities.

Table 8 **Frequency of Exams and Consultations**	
If the employee is covered by:	**Then medical surveillance must include:**
• Standard medical surveillance	• Exams and consultations: – Before assignment. **Note:** If the employee is a hazardous materials (HAZMAT) team member or a hazardous materials specialist, the employee must receive a baseline physical examination. – At least once every 12 months after their initial assignment unless the physician believes a shorter, or longer interval (but no more than 24 months) is appropriate. – Whenever employees are reassigned to an area where they will no longer be covered by medical surveillance and they have not been examined within the past 6 months. – As soon as possible after an employee reports: • Signs or symptoms of possible overexposure to hazardous substances or health hazards • Injury • Exposure above the permissible exposure limits or published exposure levels – At the termination of their employment unless they were examined within the past 6 months.

~~• Incident-specific medical surveillance~~	~~• Medical consultations and exams:~~ ~~– As soon as possible following the incident or development of signs or symptoms.~~ ~~– At additional times, if the physician determines follow-up is medically necessary.~~))

Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-11060 ((~~Keep records.~~))

((~~**You must:**~~

~~• Keep a record of:~~

~~– Name and Social Security number of the employee receiving medical surveillance~~

~~– Physicians' written opinions, recommended limitations, and results of examinations and tests~~

~~– Any employee medical complaints regarding hazardous substance exposures~~

~~– A copy of all information given to the examining physician (except a copy of this chapter)~~

~~**Note:** Keep records meeting the criteria specified in chapter 296-62 WAC, Part B, Access to records, for the length of time specified in that chapter.~~))

Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-12010 ((~~Incident requirements.~~)) ((~~Recognize emergencies and initiate a response~~

~~**You must:**~~

~~• Make sure employees follow procedures in your emergency response plan to:~~

~~– Recognize when an emergency response must be initiated~~

~~– Notify employees, and others designated in your plan, of the release~~

~~– Follow immediate emergency procedures~~

~~– Prevent the incident from increasing in severity or to secure the operation.~~)) Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-12020 ((~~Implement and maintain an incident command system (ICS).~~))

((~~**You must:**~~

~~(1) Make sure a single individual, acting as the incident commander (IC), is in charge of the site-specific incident command system (ICS) and acts within their designated role and training level.~~

~~**Note:** • For multiemployer worksites:~~

The IC has responsibility for controlling emergency response operations at the site for all employers.
Emergency response plans should be consistent in designating who assumes the IC position.
- If the first employee arriving at the scene is not trained as an IC (see Table 5, Training Requirements for Incident Commanders and Specialist Employees, WAC 296-824-11020), they may take control of the incident within their designated role and train ing level.

(2) Make sure all employers' emergency responders and their communications are coordinated and controlled by the IC.

Note: The IC may delegate tasks to subordinates (within their training level).

(3) Make sure each employer at the scene has designated a representative to assist the IC.

(4) Establish security and control of the site as specified in your written emergency response plan.)) Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-12030 ((Prepare skilled support personnel.))

((**Note:** The duties of skilled support personnel are described in Table 1, Roles and Duties of Emergency Responders.

((**You must:**

(1) Make sure that your skilled support personnel (including those employees who are not regularly employed by you) who could be exposed to on-scene hazards are given an initial briefing at the site before they participate in any emergency response. The initial briefing must include:

- What chemical hazards are involved
- What duties are to be performed
- Instruction in the wearing of appropriate personal protective equipment

Note: Skilled support personnel do not need to comply with the other training requirements of this chapter.

(2) Make sure the safety and health precautions given to your employees are also given to skilled support personnel.)) Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-12040 ((Make sure the incident commander oversees activities during the response.))

((**The employer of the incident commander (IC) must:**

(1) Identify all hazardous substances and conditions present, within their training level, using site analysis and maximum exposure limits, when appropriate.

(2) Implement emergency response procedures appropriate to the hazardous substances and conditions present, such as:

- Procedures that address the use of engineering controls, hazardous substance handling, and new technologies
- Procedures that address decontamination
- Procedures that address PPE
- Procedures that limit the number of personnel to those who are actively performing emergency response operations, in areas where exposure could exist.

(3) Designate an incident safety officer (ISO).

- Make sure the ISO demonstrates knowledge about operations being

~~implemented at the emergency response site. They must:~~

~~– Identify and evaluate hazards~~

~~– Communicate with the IC about hazards, immediately informing the IC of corrective actions that must be taken when conditions are judged to be:~~

~~• An imminent danger~~

~~**OR**~~

~~• Immediately dangerous to life or health (IDLH).~~

~~– Provide direction about the safety of operations.~~))Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-12050 ((~~Use the buddy system in danger areas.~~))

((~~**You must:**~~

~~• Make sure operations and tasks (including limited actions) in danger areas are conducted using the buddy system in teams of two or more.~~

~~**Definition:**~~

~~Danger areas are areas where conditions pose a serious danger to employees, such as areas where:~~

~~• Immediately dangerous to life or health (IDLH) conditions could exist.~~

~~**OR**~~

~~• High levels of exposure to toxic substances could exist.~~

~~**OR**~~

~~• There is a potential for exceeding the lower explosive limit (LEL), also known as the lower flammability limit (LFL), of a hazardous substance.~~))
Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-12060 ((~~Provide rescue and medical assistance.~~))

((~~**You must:**~~

~~(1) Provide stand-by employees equipped with the same level of personal protective equipment (PPE) as the entrants, for assistance or rescue.~~

~~**Note:**~~ ~~• The buddy system applies to stand by employees (see WAC 296-824-12050).~~

~~• One of the two stand by employees can be assigned to another task provided it does not interfere with the performance of the stand by role.~~

~~• Rescue equipment should be selected and provided based on the types of rescue situations that could occur.~~

~~**You must:**~~

~~(2) Make sure employees trained in first aid are readily available with necessary medical equipment and have a way to transport the injured.~~

~~**Note:**~~ ~~• Employee training is covered by WAC 296-800-150, first aid. This rule requires training on the eighteen subjects listed in addition to any subjects that are specific to your workplace emergency hazards (for example: If exposure to corrosive substances could occur, training would need to include first aid procedures for treating chemical burns).~~

~~• Employers who designate and train their employees to provide first aid are covered by WAC 296-62-08001 through 296-62-08005, bloodborne pathogens.~~))

Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-13010 ((Personal protective equipment.)) ((Use appropriate personal protective equipment (PPE).

Note:
- Only properly trained employees should select PPE. Hazardous materials technicians and hazardous materials specialists can select PPE within the competencies specified in Table 4.
- Selection requirements in other PPE rules also apply, including:
  - WAC 296-800-160, Personal protective equipment.
  - Chapter 296-62 WAC, Part E, Respiratory protection.
  - WAC 296-24-58505, Fire brigades.
  - Chapter 296-305 WAC, Safety standards for fire fighting.

You must:

- Provide employees with appropriate PPE and make sure it is used if hazards could be present.
- Select PPE (such as respirators, gloves, protective suits and other PPE) based on:
  - An evaluation of the performance characteristics (such as breakthrough time and hazardous substance-specificity of the material or item) relevant to the requirements and limitations of the site.
  - Task-specific conditions and durations.
  - The hazards and potential hazards of the site (see Table 9, Selecting PPE for Specific Hazards).
- Select totally encapsulating chemical protective (TECP) suits, as specified in Table 9, that:
  - Maintain positive air pressure.
  - Prevent inward test gas leakage of more than 0.5 percent.

Note: Follow the manufacturer's recommended procedure for testing a TECP suit's ability to maintain positive air pressure and prevent inward gas leakage. Other established test protocols for these suits, for example NFPA 1991 and ASTM F1052-97, may also be used.

Table 9
Selecting PPE for Specific Hazards

If:	**Then:**
Inhalation hazards could be present.	Positive-pressure (pressure-demand) self-contained breathing apparatus (SCBA) **OR** A decreased level of respiratory protection only when the incident commander determines, from air monitoring results, that employees will be adequately protected.
Chemical exposure levels will create a substantial possibility of: - Immediate death. - Immediate serious illness or injury. - Reduced ability to escape.	Either positive-pressure (pressure-demand): - SCBA - Air-line respirators equipped with an escape air supply.
Skin absorption of a hazardous substance may result in a substantial possibility of: - Immediate death. - Immediate serious illness or injury. - Reduced ability to escape.	Protection equivalent to Level A including a totally encapsulating chemical protective (TECP) suit.))

Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-13020 ((~~Control hazards created by personal protective equipment (PPE).~~))

((~~**You must:**~~

~~• Control hazards created by the use of PPE, including:~~

~~– Heat stress due to extremely high temperatures.~~

~~– Any other employee health hazard and consideration.~~))Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-13030 ((~~Use personal protective equipment (PPE) properly.~~))

((~~**You must:**~~

~~(1) Make sure employees inspect PPE before, during and after use, following your plan's procedures.~~

~~(2) Make sure employees put on (don) and remove (doff) PPE following your plan's procedures.~~

~~(3) Make sure employees do not interchange self-contained breathing apparatus (SCBA) air cylinders from different manufacturers, unless all of the following apply:~~

~~• There is a life-saving emergency~~

~~• You need a supplemental air supply~~

~~• The cylinders are of the same capacity and pressure rating.~~

~~(4) Make sure compressed air cylinders used with SCBAs meet the testing and service life requirements of the United States Department of Transportation (USDOT). Search at: *http://www.dot.gov.*~~

~~**Note:** You can also check with the cylinder manufacturers to obtain USDOT test and service life specifications.~~

~~**You must:**~~

~~(5) Make sure PPE is maintained in a safe and reliable condition using your plan's procedures.~~

~~PPE maintenance includes:~~

~~• Decontamination~~

~~• Cleaning~~

~~• Inspection~~

~~• Identification of damage or defects~~

~~• Parts repair or replacement~~

~~• Storage or disposal.~~)) Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-14010 ((~~Postemergency response.~~))

((~~**Important:**~~

~~• Postemergency response is the stage of the emergency response where the immediate threat from the release has been stabilized or eliminated, and~~

cleanup of the site has started.

- When cleanup is done by the employees who were part of the initial emergency response, the employees are not covered by this section (however, training, PPE and other requirements in WAC 296-824-11010 through 296-824-13030 apply to these employees).

You must:

(1) Follow Table 10 to determine which requirements apply to your postemergency response activities.

(2) Maintain clean-up equipment as specified in Table 10.

Table 10
Rules that Apply to Postemergency Response Activities

When postemergency response cleanup is performed by employees who were not part of the initial emergency response and:	**The following rules or requirements apply:**
It is necessary to remove hazardous substances, health hazards and contaminated materials (example: Soil) from the site	Chapter 296-62 WAC, Part P, Hazardous waste operations and treatment, storage and disposal facilities.
Cleanup is done on plant property using plant or workplace employees **AND** It is not necessary to remove hazardous substances, health hazards and contaminated materials from the site.	For training: - WAC 296-24-567(1), Employee emergency action plans - Chapter 296-62 WAC, Part E, Respiratory protection - WAC 296-800-170, Employer chemical hazard communication - Other appropriate training requirements relevant to personal protective equipment (PPE) and decontamination For equipment: - Make sure that all equipment used for clean-up work is serviced and inspected before use.))

Reserved.

AMENDATORY SECTION (Amending WSR 02-11-141, filed 5/22/02, effective 10/1/02)

WAC 296-824-15010 ((Definitions.)) ((The following definitions are specific to this chapter:

Annually

Any twelve-month cycle.

Buddy system

A system of organizing employees (who enter or stand by danger areas) into work groups, so each employee can be observed by at least one other member of the group. The purpose of this system is to provide rapid assistance to employees in an emergency.

Clean-up operation(s)

An operation where hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleared up or, in any other manner, processed or handled with the goal of making the site safer for people or the environment.

Danger area

Areas where conditions pose a serious danger to employees, such as areas where:

- Immediately dangerous to life or health (IDLH) conditions could exist

OR

- High levels of exposure to toxic substances could exist

OR

- There is a potential for exceeding the lower explosive limit (LEL), also known as the lower flammability limit (LFL), of a substance.

Decontamination

Removing hazardous substances from employees and their equipment so potential adverse health effects will not occur. **Emergency response**

An organized response to an anticipated release of a hazardous substance that is, or could become an uncontrolled release.

Emergency response plan

A written plan that requires coordination between emergency response participants, and contains procedures, criteria, and other information that will be applied to emergency response operations. Each employer's plan should be compatible with local and state plans.

Engineering controls

Methods of controlling employee exposures by modifying the source or reducing the quantity of contaminants.

Hazardous materials team (HAZMAT team)

A group of employees who are expected to perform responses to releases, or possible releases, of hazardous substances for the purpose of control and stabilization. As a result of their duties, HAZMAT team members may have close contact with hazardous substances.

Note: A HAZMAT team may be a separate component of a fire brigade or fire department.

Hazardous substance

Any of the following substances that could adversely affect an exposed employee's health or safety:

- Substances defined under section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) or "Superfund" Act (visit: *http://www.epa.gov*)
- Biological or other disease-causing agents released that could reasonably be expected to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in a person or their offspring when the person:
  - Is directly exposed to the agent in the environment
  - Directly ingests, inhales, or assimilates the agent from the environment
  - Indirectly ingests the agent through a food chain
- Substances listed by the United States Department of Transportation as hazardous materials under Title 49 (Transportation) in the Code of Federal Regulations (CFR), Part 172, section 101 and appendices (visit: *http://www.nara.gov* and search for "List of CFR subjects")
- Hazardous wastes as defined in this chapter.

Hazardous waste

A substance designated by chapter 173-303 WAC, Dangerous waste regulations, department of ecology, as a dangerous waste, or an extremely hazardous waste and any waste fitting the definition of "health hazard" in this chapter.

Note: For department of ecology regulations, visit: *http://www.ecy.wa.gov*

Health hazard

A chemical, a mixture of chemicals, or a pathogen for which there is statistically significant evidence, based on at least one study conducted according to established scientific principles, that acute or chronic health effects may occur in exposed employees.

The term "health hazard" includes stress due to temperature extremes and chemicals that are:

- Carcinogens
- Toxic or highly toxic agents
- Reproductive toxins, irritants, corrosives, sensitizers,

hepatotoxins, nephrotoxins, or neurotoxins

- Agents acting on the hematopoietic system agents that damage lungs, skin, eyes, or mucous membranes. (Detailed definitions of these chemical terms can be found in the Safety and health core rules, WAC 296-800-170, chemical hazard communication.)

Incident command system (ICS)

An organized approach to control and manage operations at an emergency response incident.

Incidental release

A release that can be safely controlled at the time of the release and does not have the potential to become an uncontrolled release.

Note:

Example of a situation that results in an incidental release:

A tanker truck is receiving a load of hazardous liquid when a leak occurs. The driver knows the only hazard from the liquid is minor skin irritation. The employer has trained the driver on procedures and provided equipment to use for a release of this quantity. The driver puts on skin protection and stops the leak. A spill kit is used to contain, absorb, and pick up the spilled material for disposal.

Immediately dangerous to life or health (IDLH)

Any atmospheric condition that would:

- Cause an immediate threat to life

OR

- Cause permanent or delayed adverse health effects

OR

- Interfere with an employee's ability to escape

Limited action

Action necessary to:

- Secure an operation during emergency responses,

OR

- Prevent an incident from increasing in severity.

Examples include shutting down processes and closing emergency valves.

Lines of authority

A preestablished ranking of individuals, qualified to assume a commanding role during an emergency response, noted in an emergency response plan and implemented during a response. This is most important when responders from multiple employers could participate in an emergency response.

Lower explosive limit (LEL)

See lower flammable limit (LFL).

Lower Flammable limit (LFL)

The lowest concentration of a material that will propagate a flame. The LFL is usually expressed as a percent (by volume) of the material in air (or other oxidant).

Must

Must means mandatory.

Permissible exposure limit (PEL)

Means the established time-weighted-average (TWA) concentration or ceiling concentration of a contaminant that must not be exceeded. The exposure, inhalation, or dermal permissible limit specified in chapter 296-62 WAC, Part H, Air contaminants. **Personal protective equipment (PPE)**

Protective items designed to be worn by the user to protect them against airborne, skin contact and other hazards. This includes items such as respiratory protection, protective suits, gloves, eye protection, etc.

Postemergency response

The stage of the emergency response where the immediate threat from the release has been stabilized or eliminated, and cleanup of the site has

started.

Published exposure level

Exposure limits published in *"National Institute for Occupational Safety and Health (NIOSH) Recommendations for Occupational Safety and Health"* (DHHS publication #92-100, 1992).

If an exposure limit is not published by NIOSH, then "published exposure level" means the exposure limits published by the American Conference of Governmental Industrial Hygienists (ACGIH) in *"TLVs and BEIs. Threshold Limit Values for Chemical Substances and Physical Agents"* (1999 edition).

Note: Additional exposure levels published by recognized organizations such as the American Industrial Hygiene Association are not required to be observed by this rule; however, they may be a useful resource when a hazardous substance is not covered by NIOSH and ACGIH publications.

Release

A spill, leak, or other type of hazardous substance discharge.

Uncontrolled release

A release where significant safety and health risks could be created. Releases of hazardous substances that are either incidental or could not create a safety or health hazard (i.e., fire, explosion or chemical exposure) are not considered to be uncontrolled releases.

Examples of conditions that could create a significant safety and health risk:

- Large-quantity releases
- Small releases that could be highly toxic
- Potentially contaminated individuals arriving at hospitals
- Airborne exposures that could exceed a WISHA permissible exposure limit or a published exposure limit and employees are not adequately trained or equipped to control the release.

Example of an uncontrolled release:

A forklift driver knocks over a container of a solvent-based liquid, releasing the contents onto the warehouse floor. The driver has been trained to recognize the vapor is flammable and moderately toxic when inhaled. The driver has not been trained or provided appropriate equipment to address this type of spill. In this situation, it is not safe for the driver to attempt a response. The driver needs to notify someone of the release so an emergency response can be initiated.

Workplace

- A fixed facility

OR

- A temporary location (such as a traffic corridor)

OR

- Locations where employees respond to emergencies.

You

The employer. For a complete definition of "employer" see Safety and health core rules, chapter 296-800 WAC.)) Reserved.

NEW SECTION

WAC 296-824-200 Planning.

Your Responsibility:

To anticipate and plan for emergency response operations.

NEW SECTION

WAC 296-824-20005 Develop an emergency response plan.

Note:
- You may already have an emergency response plan, such as required by chapter 296-62 WAC, Part P, Hazardous waste operations and treatment, storage and disposal facilities or by state and locally coordinated response efforts (Section 303 of Superfund Amendments and Reauthorization Act (SARA), Title III). You may use those plans to comply with this section, if they include the items listed below.
- Before a written emergency response plan can be developed, you will need to anticipate the types of uncontrolled releases that employees could encounter in your workplace(s).

You must:

(1) Make sure your plan is written and adequately addresses, as a minimum, all of the following:

- Preemergency planning and coordination with additional responders (including personnel from other employers such as: Fire departments, law enforcement agencies, emergency medical services, and state or federal agencies).
- Personnel roles, (See Table 1) and lines of authority and communications for all affected parties including responders
- Employee training (see WAC 296-824-30005 for more detail):

Note:
- Responders' level of training depends on the duties or roles the employer assigns.
- Training for the employees' role should address the competencies specified in Tables 3 through 6.
- Training on specific substances may be appropriate depending on the number and characteristics of hazardous substances expected to be encountered. For example, if employees may only respond to one substance, you could provide training (covering the knowledge and skills specified in Tables 3 through 6) on that single substance. If employees might respond to a range of hazardous substances, training may be required to cover categories of hazardous substances.
- Videos and automated training methods (for example: Interactive computer-based programs) may be used in training; however, instructors must be readily available to:
  – Encourage and provide responses to questions for the benefit of the group.
  – Evaluate employee understanding of the material.
  – Provide other instructional interaction to the group.

- Emergency recognition
- Immediate emergency procedures including:

– Methods of alerting employees (see WAC 296-800-310, exit routes and employee alarm systems) and outside responders

– Procedures for limited action (emergency prevention)

Note: ***Limited action*** includes shutting down processes, closing emergency valves and other critical actions to secure the operation, or prevent the incident from increasing in severity.

Limited Action and Employee Roles	
If . . .	**Then employees involved would be:**
Limited action could be conducted in the danger area	Considered emergency responders
Limited action will not be conducted in the danger area	Considered evacuees, not emergency responders

– Details of who will evacuate immediately and who will remain behind for limited action

– Evacuation routes and procedures

– How to establish safe distances and places of refuge (for example, during emergency response the incident commander (IC) decides to make changes based on new developments, i.e., changes in the wind direction).

- Methods of securing and controlling access to the site
- Emergency medical treatment and first aid
- A complete personal protective equipment (PPE) program that addresses:

– Selection of PPE including selection criteria to be used and the identification, specified use and limitations of the PPE selected.

– Training on proper use of PPE (including maintenance). – Hazards created by wearing PPE including heat stress during temperature extremes, and/or other appropriate medical considerations.

– Criteria used for determining the proper fit of PPE.

– Procedures covering proper use of PPE including procedures for inspection, putting it on (donning) and removing it (doffing).

– Maintenance of PPE including procedures for decontamination, disposal and storage.

– Methods used to evaluate the effectiveness of your PPE program.

Note:
- If a manufacturer's printed information or WISHA rule adequately addresses procedural requirements (such as donning or doffing for PPE), it is not necessary to rewrite this into your program; simply attach the printed information.
- You may use written procedures provided by the equipment manufacturer when they meet the requirements of other chapters, including chapter 296-62 WAC, Part E, Respiratory protection.

- Emergency equipment
- Emergency response procedures
- Decontamination procedures determined by a hazardous materials specialist or other qualified individual
- Methods to critically assess the response and conduct appropriate follow-up

You must:

(2) Make your written emergency response plan available to employees, their representatives, and WISHA personnel for inspecting or copying.

Note: In situations where multiple employers could respond to an incident, all plans should consistently address:
- Who will be designated as the incident commander (IC)

AND
- If, when, and how transfer of the incident commander (IC) position will take place.

Table 1
Roles and Duties of Emergency Responders

If the employee's role is:	Then all of the following apply. They:
First responder at the awareness level	- Are likely to witness or discover a hazardous substance release - Are trained to initiate an emergency response by notifying the proper authorities of the release - Take no further action beyond notifying the authorities
First responder at the operations level	- Respond to actual or potential releases in order to protect nearby persons, property, and/or the environment from the effects of the release - Are trained to respond defensively, without trying to stop the release - May try to: - Confine the release from a safe distance - Keep it from spreading - Protect others from hazardous exposures
Hazardous materials technician	- Respond to releases or potential releases, with the intent of stopping the release - Are trained to approach the point of release offensively in order to, either: - Plug

	- Patch - Stop the release using other methods
Hazardous materials specialist	• Respond along with, and provide support to, hazardous materials technicians • Are required to have more specific knowledge of hazardous substances than a hazardous materials technician • Act as the site activity liaison when federal, state, local, and other government authorities participate
Incident commander	• Have ultimate responsibility for: - Direction - Control - Coordination of the response effort - Will assume control of the incident beyond the first responder awareness level
Specialist employee	• Are a technical, medical, environmental, or other type of expert • May represent a hazardous substance manufacturer, shipper, or a government agency • May be present at the scene or may assist from an off-site location • Regularly work with specific hazardous substances • Are trained in the hazards of specific substances • Are expected to give technical advice or assistance to the incident commander or incident safety officer, when requested
Skilled support personnel	• Are needed to perform an immediate, specific emergency support task at the site • Are skilled in the operation of equipment including: – Earth moving equipment – Cranes – Hoisting equipment
Incident safety officer	• Are designated by the incident commander • Are knowledgeable in operations being implemented at the site • Have specific responsibility to: – Identify and evaluate hazards – Provide direction on employee safety matters

NEW SECTION

WAC 296-824-300 Training.
Your responsibility:

To make sure employees participating in emergency response operations are appropriately trained for their assigned roles and duties.

NEW SECTION

WAC 296-824-30005 Train your employees.

Note:
- Use Tables 3 through 6 to identify your employees' training competencies.
- You may conduct training internally, or use outside training services to comply with this section.
  - When outside trainers are hired, you are still responsible for making sure the requirements of this section are met. For example, employers may compare the course outline to the competencies listed in Tables 3, 4 and 5.

You must:

- Make sure employees are appropriately trained for their assigned roles and duties as follows:

EXEMPTION: Skilled support employees are not covered by the training requirements in this section. (See WAC 296-824-50015.)

– Initial training:

- Provide initial training before the employee is allowed to participate in an actual emergency response operation.

Note: When first responders at the awareness or operations level have sufficient experience to objectively demonstrate competencies specified in Table 3, you may accept experience instead of training.

- Make sure initial training adequately addresses the competencies in Tables 3 through 6 and the minimum training durations in Table 2.
- Certify that employees objectively demonstrate competencies specified in Tables 3, 4 and 5 (except for employees trained as first responders at the awareness level).

– Retraining (refresher) training:

- Provide retraining annually
- Make sure retraining covers necessary content
- Document training or demonstrated competency

Note: Retraining is not required when employees demonstrate competencies annually and a record is kept of the demonstration methodology used.

– Trainer qualifications:

- Verify trainers have satisfactorily completed an instructors' training course for the subjects they teach. For example, courses offered by the United States National Academy, or equivalent courses are acceptable.

OR

- Have the educational and instructional experience necessary for training.

– Specialist employees:

- Specialist employees who have been sent to the scene to advise or assist must receive training or demonstrate competency in their specialty, annually.

Table 2
Minimum Training Durations for All Responders

If you are a:	Then:
First responder at the awareness level	Training duration needs to be sufficient to provide the required competencies
First responder at the operations level	You need a minimum of 8 hours training (see Table 3)
Hazardous materials technician	You need a minimum of 24 hours training (see Table 4)
Hazardous materials specialist	You need a minimum of 24 hours training (see Table 4)
Incident commander	You need a minimum of 24 hours training (see Table 5)

Table 3 Competencies for First Responders at the Awareness Level and Operations Level		
Employees must be able to show they:	When they are designated as First Responders at the:	
	Awareness Level	Operations Level
Understand what hazardous substances are and their associated risks.	X	X
Recognize the presence of hazardous substances in an emergency.	X	X
Can identify the hazardous substances, when possible.	X	X
Understand the potential consequences of hazardous substances in an emergency.	X	X
Understand the role of a first responder at the awareness level as described in: • The employer's emergency response plan, including site security and control. • The United States Department of Transportation's Emergency Response Guidebook. *(search at: http://www.dot.gov).*	X	X
Can use The United States Department of Transportation's Emergency Response Guidebook.	X	X
Recognize the need for additional resources and the need to notify the incident's communication center accordingly.	X	X
Know basic hazard and risk assessment techniques.		X
Can select and use personal protective equipment (PPE) appropriate for first responder operations level.		X
Understand basic hazardous materials terms.		X
Can perform basic control, containment, and/or confinement operations within the capabilities of the resources and PPE available.		X
Can implement decontamination procedures to their level training.		X
Understand relevant standard operating and termination procedures.		X

Table 4 Competencies for Hazardous Materials Technicians and Hazardous Materials Specialist		
Employees must be able to show they:	When they are designated as a Hazardous Materials:	
	Technician	Specialist
Have the competencies specified for the first responder operations level. (See Table 3)	X	X
Can implement an employer's emergency response plan.	X	X
Can function within their assigned role in the incident command system.	X	X
Understand hazard and risk assessment techniques.	X	X
Understand basic chemical and toxicological terminology and behavior.	X	X
Can use field survey instruments and equipment to classify, identify, and verify materials at the incident.	X	X

Can select and use personal protective equipment (PPE) appropriate for hazardous materials technicians.	X	X
Can perform advance control, containment, and/or confinement operations within the capabilities of the resources and PPE available.	X	X
Can implement decontamination procedures to their level of training.	X	X
Understand termination procedures.	X	X
Can implement the local emergency response plan.		X
Know of the state emergency response plan.		X
Can develop a site safety and control plan.		X
Understand chemical, radiological, and toxicological terminology and behavior.		X
Understand in-depth hazard and risk techniques.		X
Can use advanced survey instruments and equipment to classify, identify and verify materials at the incident.		X
Can select and use proper specialized chemical PPE given to hazardous materials specialists.		X
Can perform specialized control, containment, and/or confinement operations within the capabilities of the resources and PPE available.		X
Can determine decontamination procedures.		X

Table 5
Competencies for Incident Commanders

Employees designated as Incident Commanders must be able to show they:
❦ Have competencies specified for the First Responder Operations Level. (See Table 3.)
❦ Know of the state emergency response plan and the Federal Regional Response Team.
❦ Can implement the local emergency response plan.
❦ Can implement the employer's emergency response plan.
❦ Have knowledge of the incident command system (ICS) and understand how they relate to it.
❦ Can implement the employer's ICS.
❦ Understand the hazards and risks associated with employees working in chemical protective clothing.
❦ Understand the importance of decontamination procedures.
Note: If the first employee arriving at the scene is not trained as an IC, they may take control of the incident within their designated role and training level.

Table 6
Competencies for Specialist Employees

Employees designated as Specialist Employees must be able to show they:
❦ Have current knowledge in their field regarding safety and health practices relating to the specific hazardous substances.
❦ Have the knowledge of the ICS and understand how they relate to it.

- Understand the care and use of personal protective equipment (PPE).

NEW SECTION

WAC 296-824-400 Medical surveillance. Summary.
Your responsibility:
To provide and document medical surveillance for your employees.
You must:
Provide medical surveillance to employees
WAC 296-824-40005
Keep records
WAC 296-824-40010.

NEW SECTION

WAC 296-824-40005 Provide medical surveillance to employees. You must:

(1) Provide medical surveillance for employees to comply with Tables 7 and 8, and the following:

- Make medical surveillance available at:
  - Reasonable times and places.
  - No cost to employees, including travel associated costs such as mileage, gas or bus fare if the employee is required to travel off site
  AND
  - Wages for additional time spent outside of employees normal work hours.
- Make sure a licensed physician performs or supervises exams and procedures.
- Give complete information to the examining physician including:
  - A copy of this chapter.
  - A description of the employee's duties that relate to hazardous substance exposure.
  - The hazardous substance exposure levels anticipated for the employee.
  - A description of the personal protective equipment (PPE) the employee could use.
  - Information available from previous medical examinations.
  - The medical evaluation information required by chapter 296-62 WAC, Part E, Respiratory protection.
- Medical exams must include, at a minimum:
  - A medical history
  - A work history (or updated history if on file)
  - A special emphasis on:
    - Assessment of symptoms related to handling hazardous substances
    - Health hazards
    - Evaluation of fitness for duty (including the ability to wear any personal protective equipment (PPE) or other conditions that may be expected at the workplace)
  - Other content as determined by the examining physician.

Note: The physician should consult the *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* and the *Medical Management Guidelines for Acute Chemical Exposure* (search OSHA website: http://www.osha.gov).

(2) Obtain the physician's written opinion and give a copy to the employee that includes:

- A statement of whether or not medical conditions were found which would increase the employee's risk for impairment during emergency response work or respirator use.
  - Do not include specific findings or diagnoses unrelated to occupational exposures.
- Limitations recommended to the employee's assigned work, if any.
- Exam and test results if the employee requests this information.
- A statement that affirms the employee has been confidentially informed of medical exam results (including medical conditions requiring follow-up).

Table 7
Medical Surveillance for Employee Categories

If the employee is covered by this chapter and is:	Then you must:
• Exposed for at least 30 days a year to health hazards or hazardous substances at or above the permissible exposure limit or published exposure levels (even when respirators are used), **OR** • Required to wear a respirator for at least 30 days a year.*	• Offer standard medical surveillance as specified in Table 8.*
• A hazardous materials (HAZMAT) team member • A hazardous materials specialist	• Provide standard medical surveillance as specified in Table 8.
• An emergency responder who shows immediate or delayed signs or symptoms possibly resulting from exposure to hazardous substances during an incident.	• Provide incident-specific medical surveillance as specified in Table 8.
• Not an emergency responder and: – May be injured – Shows immediate or delayed signs or symptoms possibly resulting from exposure to hazardous substances – May have been exposed to hazardous substances at concentrations above the permissible exposure limits (PELs) or the published exposure levels without appropriate PPE.	• Offer incident-specific medical surveillance as specified in Table 8.

***Note:** A medical evaluation for respirator use is required by chapter 296-62 WAC, Part E, Respiratory protection, for those employees who have not been cleared for respirator use during medical surveillance activities.

Table 8
Frequency of Exams and Consultations

If the employee is covered by:	Then medical surveillance must include:

• Standard medical surveillance	• Exams and consultations: – Before assignment. **Note:** If the employee is a hazardous materials (HAZMAT) team member or a hazardous materials specialist, the employee must receive a baseline physical examination. – At least once every 12 months after their initial assignment unless the physician believes a shorter, or longer interval (but no more than 24 months) is appropriate. – Whenever employees are reassigned to an area where they will no longer be covered by medical surveillance and they have not been examined within the past 6 months. – As soon as possible after an employee reports: • Signs or symptoms of possible overexposure to hazardous substances or health hazards • Injury • Exposure above the permissible exposure limits or published exposure levels – At the termination of their employment unless they were examined within the past 6 months.
• Incident-specific medical surveillance	• Medical consultations and exams: – As soon as possible following the incident or development of signs or symptoms. – At additional times, if the physician determines follow-up is medically necessary.

NEW SECTION

WAC 296-824-40010 Keep records.
You must:
• Keep a record of:
– Name and Social Security number of the employee receiving medical surveillance
– Physicians' written opinions, recommended limitations, and results of examinations and tests
– Any employee medical complaints regarding hazardous substance exposures
– A copy of all information given to the examining physician (except a copy of this chapter)

Note: Keep records meeting the criteria specified in chapter 296-62 WAC, Part B, Access to records, for the length of time specified in that chapter.

NEW SECTION

WAC 296-824-500 Incident requirements. Summary.
Your responsibility:
To conduct and manage emergency response operations so employees are

protected from hazardous substances and conditions.

You must:

Recognize emergencies and initiate a response
WAC 296-824-50005

Implement and maintain an incident command system (ICS)
WAC 296-824-50010

Prepare skilled support personnel
WAC 296-824-50015

Make sure the incident commander oversees activities during the response
WAC 296-824-50020

Use the buddy system in danger areas
WAC 296-824-50025

Provide rescue and medical assistance
WAC 296-824-50030.

NEW SECTION

WAC 296-824-50005 Recognize emergencies and initiate a response.

You must:

- Make sure employees follow procedures in your emergency response plan to:
  - Recognize when an emergency response must be initiated
  - Notify employees, and others designated in your plan, of the release
  - Follow immediate emergency procedures
  - Prevent the incident from increasing in severity or to secure the operation.

NEW SECTION

WAC 296-824-50010 Implement and maintain an incident command system (ICS).

You must:

(1) Make sure a single individual, acting as the incident commander (IC), is in charge of the site-specific incident command system (ICS) and acts within their designated role and training level.

Note:
- For multiemployer worksites:
  - The IC has responsibility for controlling emergency response operations at the site for all employers.
  - Emergency response plans should be consistent in designating who assumes the IC position.
- If the first employee arriving at the scene is not trained as an IC (see Table 5, Competencies for Incident Commanders, WAC 296-824-30005), they may take control of the incident within their designated role and training level.

(2) Make sure all employers' emergency responders and their communications are coordinated and controlled by the IC.

Note: The IC may delegate tasks to subordinates (within their training level).

(3) Make sure each employer at the scene has designated a representative to assist the IC.

(4) Establish security and control of the site as specified in your written emergency response plan.

NEW SECTION

WAC 296-824-50015 Prepare skilled support personnel.

Note: The duties of skilled support personnel are described in Table 1, Roles and Duties of Emergency Responders.

You must:

(1) Make sure that your skilled support personnel (including those employees who are not regularly employed by you) who could be exposed to on-scene hazards are given an initial briefing at the site before they participate in any emergency response. The initial briefing must include:

- What chemical hazards are involved
- What duties are to be performed
- Instruction in the wearing of appropriate personal protective equipment

Note: Skilled support personnel do not need to comply with the other training requirements of this chapter.

(2) Make sure the safety and health precautions given to your employees are also given to skilled support personnel.

NEW SECTION

WAC 296-824-50020 Make sure the incident commander oversees activities during the response.

The employer of the incident commander (IC) must:

(1) Identify all hazardous substances and conditions present, within their training level, using site analysis and maximum exposure limits, when appropriate.

(2) Implement emergency response procedures appropriate to the hazardous substances and conditions present, such as:

- Procedures that address the use of engineering controls, hazardous substance handling, and new technologies
- Procedures that address decontamination
- Procedures that address PPE
- Procedures that limit the number of personnel to those who are actively performing emergency response operations, in areas where exposure could exist.

(3) Designate an incident safety officer (ISO).

- Make sure the ISO demonstrates knowledge about operations being implemented at the emergency response site. They must:

– Identify and evaluate hazards

– Communicate with the IC about hazards, immediately informing the IC of corrective actions that must be taken when conditions are judged to be:

- An imminent danger

OR

- Immediately dangerous to life or health (IDLH).

– Provide direction about the safety of operations.

NEW SECTION

WAC 296-824-50025 Use the buddy system in danger areas.

You must:

- Make sure operations and tasks (including limited actions) in danger areas are conducted using the buddy system in teams of two or more.

Definition:

Danger areas are areas where conditions pose a serious danger to employees, such as areas where:

- Immediately dangerous to life or health (IDLH) conditions could exist.

OR

- High levels of exposure to toxic substances could exist.

OR

- There is a potential for exceeding the lower explosive limit (LEL), also known as the lower flammability limit (LFL), of a hazardous substance.

NEW SECTION

WAC 296-824-50030 Provide rescue and medical assistance.

You must:

(1) Provide stand-by employees equipped with the same level of personal protective equipment (PPE) as the entrants, for assistance or rescue.

Note:
- The buddy system applies to stand-by employees (see WAC 296-824-50025).
- One of the two stand-by employees can be assigned to another task provided it does not interfere with the performance of the stand-by role.
- Rescue equipment should be selected and provided based on the types of rescue situations that could occur.

You must:

(2) Make sure employees trained in first aid are readily available with necessary medical equipment and have a way to transport the injured.

Note:
- Employee training is covered by WAC 296-800-150, first aid. This rule requires training on the eighteen subjects listed in addition to any subjects that are specific to your workplace emergency hazards (for example: If exposure to corrosive substances could occur, training would need to include first-aid procedures for treating chemical burns).
- Employers who designate and train their employees to provide first aid are covered by WAC 296-62-08001 through 296-62-08005, bloodborne pathogens.

NEW SECTION

WAC 296-824-600 Personal protective equipment. Summary.

Your responsibility:

To provide appropriate personal protective equipment (PPE) and make sure it is used properly.

You must:

Use appropriate personal protective equipment

WAC 296-824-60005

Control hazards created by PPE
WAC 296-824-60010
Use PPE properly
WAC 296-824-60015.

NEW SECTION

WAC 296-824-60005 Personal protective equipment. Use appropriate personal protective equipment (PPE).

Note:
- Only properly trained employees should select PPE. Hazardous materials technicians and hazardous materials specialists can select PPE within the competencies specified in Table 4.
- Selection requirements in other PPE rules also apply, including:
  - WAC 296-800-160, Personal protective equipment.
  - Chapter 296-62 WAC, Part E, Respiratory protection.
  - WAC 296-24-58505, Fire brigades.
  - Chapter 296-305 WAC, Safety standards for fire fighting.

You must:

- Provide employees with appropriate PPE and make sure it is used if hazards could be present.
  - Select PPE (such as respirators, gloves, protective suits and other PPE) based on:
    - An evaluation of the performance characteristics (such as breakthrough time and hazardous substance-specificity of the material or item) relevant to the requirements and limitations of the site.
    - Task-specific conditions and durations.
    - The hazards and potential hazards of the site (see Table 9, Selecting PPE for Specific Hazards).
  - Select totally encapsulating chemical protective (TECP) suits, as specified in Table 9, that:
    - Maintain positive air pressure.
    - Prevent inward test gas leakage of more than 0.5 percent.

Note: Follow the manufacturer's recommended procedure for testing a TECP suit's ability to maintain positive air pressure and prevent inward gas leakage. Other established test protocols for these suits, for example NFPA 1991 and ASTM F1052-97, may also be used.

Table 9
Selecting PPE for Specific Hazards

If:	Then:
Inhalation hazards could be present.	Positive-pressure (pressure-demand) self-contained breathing apparatus (SCBA) **OR** A decreased level of respiratory protection only when the incident commander determines, from air monitoring results, that employees will be adequately protected.
Chemical exposure levels will create a substantial possibility of: Immediate death. Immediate serious illness or injury. Reduced ability to escape.	Either positive-pressure (pressure-demand): SCBA Air-line respirators equipped with an escape air supply.
Skin absorption of a hazardous substance may result in a substantial possibility of: Immediate death. Immediate serious illness or injury. Reduced ability to escape.	Protection equivalent to Level A including a totally encapsulating chemical protective (TECP) suit.

NEW SECTION

WAC 296-824-60010 Control hazards created by personal protective equipment (PPE).

You must:

- Control hazards created by the use of PPE, including:
  - Heat stress due to extremely high temperatures.
  - Any other employee health hazard and consideration.

NEW SECTION

WAC 296-824-60015 Use personal protective equipment (PPE) properly.

You must:

(1) Make sure employees inspect PPE before, during and after use, following your plan's procedures.

(2) Make sure employees put on (don) and remove (doff) PPE following your plan's procedures.

(3) Make sure employees do not interchange self-contained breathing apparatus (SCBA) air cylinders from different manufacturers, unless all of the following apply:

- There is a life-saving emergency
- You need a supplemental air supply
- The cylinders are of the same capacity and pressure rating.

(4) Make sure compressed air cylinders used with SCBAs meet the testing and service life requirements of the United States Department of Transportation (USDOT). Search at: *http://www.dot.gov.*

Note: You can also check with the cylinder manufacturers to obtain USDOT test and service life specifications.

You must:

(5) Make sure PPE is maintained in a safe and reliable condition using your plan's procedures.

PPE maintenance includes:

- Decontamination
- Cleaning
- Inspection
- Identification of damage or defects
- Parts repair or replacement
- Storage or disposal.

NEW SECTION

WAC 296-824-700 Postemergency response.

Your responsibility:

To protect employees during postemergency response activities by following appropriate work practices, training and other requirements.

NEW SECTION

WAC 296-824-70005 Follow the appropriate postemergency response requirements.

Important:

- Postemergency response is the stage of the emergency response where the immediate threat from the release has been stabilized or eliminated, and cleanup of the site has started.
- When cleanup is done by the employees who were part of the initial emergency response, the employees are not covered by this section (however, training, PPE and other requirements in WAC 296-824-20005 through 296-824-60015 apply to these employees).

You must:

(1) Follow Table 10 to determine which requirements apply to your postemergency response activities.

(2) Maintain clean-up equipment as specified in Table 10.

Table 10
Rules that Apply to Postemergency Response Activities

When postemergency response cleanup is performed by employees who were not part of the initial emergency response and:	**The following rules or requirements apply:**
It is necessary to remove hazardous substances, health hazards and contaminated materials (example: Soil) from the site	Chapter 296-62 WAC, Part P, Hazardous waste operations and treatment, storage and disposal facilities.
Cleanup is done on plant property using plant or workplace employees **AND** It is not necessary to remove hazardous substances, health hazards and contaminated materials from the site.	For training: - WAC 296-24-567(1), Employee emergency action plans - Chapter 296-62 WAC, Part E, Respiratory protection - WAC 296-800-170, Employer chemical hazard communication - Other appropriate training requirements relevant to personal protective equipment (PPE) and decontamination For equipment: - Make sure that all equipment used for clean-up work is serviced and inspected before use.

NEW SECTION

WAC 296-824-800 Definitions. The following definitions are specific to this chapter:

Annually

Any twelve-month cycle.

Buddy system

A system of organizing employees (who enter or stand by danger areas) into work groups, so each employee can be observed by at least one other

member of the group. The purpose of this system is to provide rapid assistance to employees in an emergency.

Clean-up operation(s)

An operation where hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleared up or, in any other manner, processed or handled with the goal of making the site safer for people or the environment.

Danger area

Areas where conditions pose a serious danger to employees, such as areas where:

- Immediately dangerous to life or health (IDLH) conditions could exist

OR

- High levels of exposure to toxic substances could exist

OR

- There is a potential for exceeding the lower explosive limit (LEL), also known as the lower flammability limit (LFL), of a substance.

Decontamination

Removing hazardous substances from employees and their equipment so potential adverse health effects will not occur. **Emergency response**

An organized response to an anticipated release of a hazardous substance that is, or could become an uncontrolled release.

Emergency response plan

A written plan that requires coordination between emergency response participants, and contains procedures, criteria, and other information that will be applied to emergency response operations. Each employer's plan should be compatible with local and state plans.

Engineering controls

Methods of controlling employee exposures by modifying the source or reducing the quantity of contaminants.

Hazardous materials team (HAZMAT team)

A group of employees who are expected to perform responses to releases, or possible releases, of hazardous substances for the purpose of control and stabilization. As a result of their duties, HAZMAT team members may have close contact with hazardous substances.

Note: A HAZMAT team may be a separate component of a fire brigade or fire department.

Hazardous substance

Any of the following substances that could adversely affect an exposed employee's health or safety:

- Substances defined under section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) or "Superfund" Act (visit: *http://www.epa.gov*)
- Biological or other disease-causing agents released that could reasonably be expected to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in a person or their offspring when the person:
  - Is directly exposed to the agent in the environment
  - Directly ingests, inhales, or assimilates the agent from the environment
  - Indirectly ingests the agent through a food chain
- Substances listed by the United States Department of Transportation as hazardous materials under Title 49 (Transportation) in the Code of Federal Regulations (CFR), Part 172, section 101 and appendices (visit: *http://www.nara.gov* and search for "List of CFR subjects")
- Hazardous wastes as defined in this chapter.

Hazardous waste

A substance designated by chapter 173-303 WAC, Dangerous waste regulations, department of ecology, as a dangerous waste or an extremely hazardous waste and any waste fitting the definition of "health hazard" in this chapter.

Health hazard

A chemical, a mixture of chemicals, or a pathogen for which there is statistically significant evidence, based on at least one study conducted according to established scientific principles, that acute or chronic health effects may occur in exposed employees.

The term "health hazard" includes stress due to temperature extremes and chemicals that are:

- Carcinogens
- Toxic or highly toxic agents
- Reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, or neurotoxins
- Agents acting on the hematopoietic system agents that damage lungs, skin, eyes, or mucous membranes. (Detailed definitions of these chemical terms can be found in the Safety and health core rules, WAC 296-800-170, chemical hazard communication.)

Incident command system (ICS)

An organized approach to control and manage operations at an emergency response incident.

Incidental release

A release that can be safely controlled at the time of the release and does not have the potential to become an uncontrolled release.

Note:

Example of a situation that results in an incidental release:

A tanker truck is receiving a load of hazardous liquid when a leak occurs. The driver knows the only hazard from the liquid is minor skin irritation. The employer has trained the driver on procedures and provided equipment to use for a release of this quantity. The driver puts on skin protection and stops the leak. A spill kit is used to contain, absorb, and pick up the spilled material for disposal.

Immediately dangerous to life or health (IDLH)

Any atmospheric condition that would:

- Cause an immediate threat to life

OR

- Cause permanent or delayed adverse health effects

OR

- Interfere with an employee's ability to escape

Limited action

Action necessary to:

- Secure an operation during emergency responses,

OR

- Prevent an incident from increasing in severity.

Examples include shutting down processes and closing emergency valves.

Lines of authority

A preestablished ranking of individuals, qualified to assume a commanding role during an emergency response, noted in an emergency response plan and implemented during a response. This is most important when responders from multiple employers could participate in an emergency response.

Lower explosive limit (LEL)

See lower flammable limit (LFL).

Lower Flammable limit (LFL)

The lowest concentration of a material that will propagate a flame. The LFL is usually expressed as a percent (by volume) of the material in air (or other oxidant).

Must

Must means mandatory.

Permissible exposure limit (PEL)

Means the established time-weighted-average (TWA) concentration or ceiling concentration of a contaminant that must not be exceeded. The exposure, inhalation, or dermal permissible limit specified in chapter 296-62 WAC, Part H, Air contaminants.

Personal protective equipment (PPE)

Protective items designed to be worn by the user to protect them against airborne, skin contact and other hazards. This includes items such as respiratory protection, protective suits, gloves, eye protection, etc.

Postemergency response

The stage of the emergency response where the immediate threat from the release has been stabilized or eliminated, and cleanup of the site has started.

Published exposure level

Exposure limits published in *"National Institute for Occupational Safety and Health (NIOSH) Recommendations for Occupational Safety and Health"* (DHHS publication #92-100, 1992).

If an exposure limit is not published by NIOSH, then "published exposure level" means the exposure limits published by the American Conference of Governmental Industrial Hygienists (ACGIH) in *"TLVs and BEIs-Threshold Limit Values for Chemical Substances and Physical Agents"* (1999 edition).

Note: Additional exposure levels published by recognized organizations such as the American Industrial Hygiene Association are not required to be observed by this rule; however, they may be a useful resource when a hazardous substance is not covered by NIOSH and ACGIH publications.

Release

A spill, leak, or other type of hazardous substance discharge.

Uncontrolled release

A release where significant safety and health risks could be created. Releases of hazardous substances that are either incidental or could not create a safety or health hazard (i.e., fire, explosion or chemical exposure) are not considered to be uncontrolled releases.

Examples of conditions that could create a significant safety and health risk:

- Large-quantity releases
- Small releases that could be highly toxic
- Potentially contaminated individuals arriving at hospitals
- Airborne exposures that could exceed a WISHA permissible exposure limit or a published exposure limit and employees are not adequately trained or equipped to control the release.

Example of an uncontrolled release:

A forklift driver knocks over a container of a solvent-based liquid, releasing the contents onto the warehouse floor. The driver has been trained to recognize the vapor is flammable and moderately toxic when inhaled. The driver has not been trained or provided appropriate equipment to address this type of spill. In this situation, it is not safe for the driver to attempt a response. The driver needs to notify someone of the release so an emergency response can be initiated.

Workplace

- A fixed facility

OR

- A temporary location (such as a traffic corridor)

OR

- Locations where employees respond to emergencies.

You

The employer. For a complete definition of "employer" see Safety and

health core rules, chapter 296-800 WAC.